

**THOMAS JEFFERSON
NATIONAL ACCELERATOR FACILITY**



TEN-YEAR SITE PLAN

FY 2007 – FY 2016

May 2005

Operated by Southeastern Universities Research Association, Inc.
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TABLE OF CONTENTS

TABLE OF CONTENTS	i
I. EXECUTIVE SUMMARY	1
II. SITE SUMMARY	3
III. MISSION	4
IV. LAND USE PLANS	7
V. FACILITIES AND INFRASTRUCTURE	7
A. Strategic Facilities & Infrastructure (F&I) Goals and Issues.....	7
B. F&I Condition Assessment	10
C. Facilities Management, Space Management and Utilization.....	12
D. Facilities Supporting Mission Activities.....	13
E. Site Utility Systems.....	14
F. Leasing	18
G. Other Facilities.....	19
H. Disposition	20
I. Long Term Stewardship.....	20
J. EM Facilities – Not Applicable	20
K. Non-SC Facilities (Excluding EM facilities) – Not Applicable. SC owns JLab.	20
L. Value Engineering	20
M. Five-year Sustainment Requirements	21
N. Maintenance Program for Nuclear Facilities	22
O. Deferred Maintenance (DM) Reduction	22
P. Recapitalization.....	23
Q. Narrative for Line Item Construction Projects.....	24
R. Performance Indicators and Measures	25
S. Process for Development of the TYSP	26
T. Facility Information Management System (FIMS).....	26
VI. SUMMARY OF RESOURCE NEEDS	27
A. Planning Assumptions - FY07 to FY11	27
B. Planning Assumptions - FY12 to FY16.....	28
C. Resource Table.....	29
VII. SUMMARY OVERVIEW AT TJNAF	30

FIGURES & TABLES

Table II-1. Lab Space Distribution (Oct 2004)	4
Table III-1. Mission Critical Facilities	6
Table V-1. Facility Condition Assessment (FY 2004).....	11
Table V-2. 2004 Utility Facility Condition Assessment	12
Table V-3. Current Leases	18
Table V-4. Potential Leases	18
Table V-5. Disposition	20
Table V-6. FY07-FY16 Recapitalization	24

Table V-7. Replacement Plant Value.....	27
Table VI. Facilities Funding Needs FY2004-FY2016 (M\$).....	29

ATTACHMENTS

Attachment 1. Existing Site Plan	31
Attachment 2. Jefferson Lab Site Photo	32
Attachment 3. Picture of ARC and FEL Buildings.....	33
Attachment 4. List of Facilities.....	34
Attachment 5. Ten Year Site Plan.....	40
Attachment 6. Utility Site Plans.....	41
Attachment 7. Deferred Maintenance Summary	50
Attachment 8. FCI History and Projections for FY04 Through FY11	51
Attachment 9. Facilities & Infrastructure Budget Datasheet	52
Attachment 10. Out Year Funding and Staffing (FY06-FY15 with FY04 & FY05) ...	57

Acronym List

ACI	Asset Condition Index (1-FCI)
ARC	Applied Research Center
AUI	Asset Utilization Index
BES	Office of Basic Energy Science
CAS	Condition Assessment Inspections
CEBAF	Continuous Electron Beam Accelerator Facility
CHL	Central Helium Liquifier
DM	Deferred Maintenance
DOD	Department of Defense
DOE	Department of Energy
EEL	Experimental Equipment Laboratory
EH&S	Environmental Health & Safety
EM	Environmental Management
ESnet	Energy Sciences Network
F&I	Facilities & Infrastructure
FCI	Facility Condition Index (DM/RPV)
FEL	Free Electron Laser
FIMS	Facility Information Management System
FTE	Full Time Equivalent
FTS	Federal Telecommunication System
FY	Fiscal Year (1 October to 30 September)
GeV	Giga (billion) electron volt
Gpm	Gallon Per Minute
GSA	General Services Administration
GPP	General Plant Project
HEP	High Energy Physics
HVAC	Heat, Ventilation, and Air Conditioning
IWS	Intermediate Water System
ISDN	Integrated Services Digital Network
JLab	Thomas Jefferson National Accelerator facility
K	Thousand
kV	Kilovolt
kW	Kilowatt
LAN	Local Area Network
LCW	Low Conductivity Water
LF	Linear Feet
MARS	Management Analysis Reporting System
MCC	Machine Control Center
MII	Maintenance Investment Index (Actual Maintenance Cost/RPV)
LINAC	Linear Accelerator
LQCD	Lattice Quantum Chromodynamics
M	Million
MCC	Machine Control Center
mbit/sec	Million bits per second

MeV	Million electron volts
MW	Megawatts
MVA	Million Volt Amps
NASA	National Aeronautical and Space Administration
NP	Office of Nuclear Physics
OSF	Other Structures & Facilities
PA	Public Address
PSI	Pounds per square inch
PVC	Polyvinyl Chloride
QA	Quality Assurance
QCD	Quantum Chromodynamics
R&D	Research & Development
RIA	Rare Isotope Accelerator
RIC	Rehab & Improvement Cost
RPAM	Real Property Asset Management
RPV	Replacement Plant Value
SC	Office of Science
Sec	Second
SF	Square Feet
SLI	Science Laboratory Infrastructure
SNS	Spallation Neutron Source
SREL	Space Radiation Effects Laboratory
SRF	Superconducting Radio Frequency
SURA	Southeastern Universities Research Association, Inc
TBD	To Be Determined
TRIC	Total Rehab & Improvement Cost
TJNAF	Thomas Jefferson National Accelerator facility
TYSP	Ten Year Site Plan VARC
VARC	Virginia Associated Research Campus
WAN	Wide Area Network

I. EXECUTIVE SUMMARY

Thomas Jefferson National Accelerator Facility (TJNAF, Jefferson Lab, or JLab), an Office of Science (SC) program-dedicated lab, primarily studies hadronic physics through the use of continuous wave electron beams. Operated as a user facility by Southeastern Universities Research Association, Inc. (SURA) for the Department of Energy (DOE), JLab provides experimenters with beams and particle detection equipment that are unique worldwide. The Ten Year Site Plan for Jefferson Lab focuses on providing and maintaining the necessary facilities for the present and planned experimental programs in support of the Department of Energy Office of Science mission.

The majority of the current facility was constructed under the initial CEBAF project between 1987 and 1992. Facilities originally built to support the 4 GeV and that now support the 6 GeV program were built with inadequate user and limited technical support space and allowed for no further growth based on the science programs. As a result, office space is crowded, with 2-3 staff or users occupying single offices. There is insufficient technical support space and those technical work spaces available are not suited to the work being performed.

The overall Facilities Condition Index (FCI) condition of the buildings, utilities, and other structures is good. The condition of real property trailers is rated as “Failed”, with all being beyond their economic life. Utilities and roadways are considered adequate. The average age of the facilities is 14 years with the majority being built around the same time. As the buildings continue to age we expect major maintenance cost spikes at 20 and 25 years.

	FCI	Rated Condition
DOE Owned Buildings	3.67%	Good
Real Property Trailers	99.19%	Failed
Other Structures & Facilities		
Tunnel & Halls	0.30%	Excellent
Utilities/Roadways	7.32%	Adequate
Overall	4.93%	Good

The cornerstone of our TYSP is a 61,000 square foot addition to CEBAF Center, currently under construction, that will provide an expanded computer center and offices allowing demolition of 22,000 square feet of existing trailer space. The maintenance backlog (deferred maintenance) will be substantially reduced with the demolition of trailers following construction of CEBAF Center Addition Phase I. Deferred Maintenance Reduction funding and other similar infusions of additional funding over the next five year period will continue to be used to reduce the maintenance backlog.

Additional Key Facilities and Infrastructure issues continue to be primarily driven by the large number of personnel who remain housed in “temporary” trailers. This plan proposes to address the programmatic needs for adequate technical support, experimental setup, and storage space by combining GPP and Deferred Maintenance Reduction funds to replace aging trailers with Technical Support Building 1, Technical Support Building 2, CEBAF Center Wing D and various storage structures. This plan relies on JLab receiving an additional \$2 million in GPP

in FY07. JLab FY08 GPP funding is \$800,000. A fallback position is to seek third party financing for at least a portion of the work.

II. SITE SUMMARY

Thomas Jefferson National Accelerator Facility (TJNAF, Jefferson Lab, or JLab), an Office of Science (SC) program-dedicated lab, is operated as a user facility by Southeastern Universities Research Association, Inc. (SURA) for the Department of Energy (DOE). JLab provides experimenters with worldwide unique capabilities for the study of hadronic physics. JLab maintains core competencies in nuclear physics and accelerator technologies to support not only its research program, but broader Office of Science missions (e.g., Spallation Neutron Source (SNS)) in the context of the national lab system and applies these technologies to activities in the national interest (e.g., Free Electron Laser (FEL)).

At the end of FY04 the site employed a total of 687 SURA (regular, part-time, casual, student), 12 DOE, 11 State employees and 31 contract labor, all of which occupy site facilities. In a normal year Jefferson Lab also serves a physics research user population of over 2,000. These users are from the United States and numerous other nations. In FY04, there was an average of 342 users on site per month. These populations are supported on the land and facilities as described in this plan.

Approximately 162.5 acres comprise the DOE owned Thomas Jefferson National Accelerator Facility located in Newport News, Virginia. Historically there have been several former users of this general area. 110 acres were the site of the former Space Radiation Effects Laboratory (SREL) operated by the National Aeronautics and Space Administration (NASA) where there was a 600 million electron volt synchrocyclotron from 1964 to 1984. The SREL, associated parking, cooling towers, and small building annex comprised 10 acres of the total former site with the remaining 100 acres being heavily wooded and undeveloped. The existing building and land were transferred from NASA to DOE in 1987 with a reimbursement to the General Services Administration (GSA) in the amount of \$2.3 million that was funded by the City of Newport News, Virginia. The SREL building is now used as the Test Lab at Jefferson Lab.

Adjacent to the NASA property to the east is an 83.65 acre parcel previously owned by U.S. Department of Defense then U.S. Department of Education for which the City of Newport News reimbursed GSA \$1.498 million in 1982. The City of Newport News gifted 44.6 acres of this property to SURA in support of the contract between SURA and DOE. SURA sold the acreage to DOE for \$1 in January 1987. The City of Newport News then gifted another 51.5 acres to SURA in 1988. In 1993, 7.9 of these acres were transferred to DOE by SURA, a portion of which was a US Air Force BOMARC Missile Site that existed during the 1950's and was abandoned in the early 1960's.

SURA retained the remaining 43.6 acres, adjacent to the Jefferson Lab site, for a 42-room Residence Facility owned and operated by SURA and for future Lab-related activities. The SURA Residence Facility is available for use by guests, visitors, users, and graduate students associated with the Lab.

North of the DOE site is an 8 acre parcel referred to as the Virginia Associated Research Campus (VARC) which is owned by the Commonwealth of Virginia and leased to SURA for

use in support of Jefferson Lab. A total of 4.8 of these acres containing the VARC and Forestry buildings are subleased to DOE. Both the SURA and VARC property are included in overall site planning. The Site Plan (Attachment 1) illustrates the property line boundaries. Attachment 2 is an aerial photo.

Funding from the Commonwealth of Virginia was provided for the construction of the 31,176 SF Free Electron Laser (FEL) Facility on DOE property, which was completed in 1997 and transferred to DOE. See photo in Attachment 3.

Jefferson Lab consists of 62 owned buildings, 2 state leased buildings, 23 real property trailers, and 10 other structures and facilities totaling 686,972 square feet (SF). Included are 49,346 square feet of real property trailers with an average age of 14 years that provide offices to approximately 150 employees and 250 users. The replacement value of conventional facilities and utilities is \$206 million. Attachment 4 is a list of the facilities.

Adjacent to the northwest of Jefferson Lab, SURA leases 44,342 SF of office and lab space located in the Applied Research Center (ARC) from the City of Newport News (see photo in Attachment 3). In addition to these facilities, Jefferson Lab has 70 personal property trailers (21,744 SF) used for storage scattered around the site and 11,558 SF off-site leased storage space. The total operating budget for the Lab in FY05 is \$100.0M. Lab space distribution by GSA Use Codes is as follows:

Table II-1. Lab Space Distribution (Oct 2004)

GSA Use Code	Description	Owned – Gross SF				Leased – Gross SF	Total SF
		Building	Real Property Trailers	Personal Property Trailers	OSF Category 3000	Building	
10	Administration	66,277	41,901			79,081	187,259
20	School		1,327				1,327
40	Storage	25,810	660	21,744		11,558	59,772
50	Industrial Bldgs	7,235					7,235
60	Service Bldgs	4,373	3,518			2,904	10,795
70	Research & Development	303,118	1,940		192,792		497,850
80	Other	378					378
Total		407,191	49,346	21,744	192,792	93,543	764,616

III. MISSION

Jefferson Lab programs and plans are aligned with the mission and goals of the Department of Energy and contribute to the Office of Science Strategic Plan. Laboratory programmatic

priorities are outlined in the Laboratory's Institutional and Business Plans. The Ten Year Site Plan follows these priorities with the goal of providing the necessary facilities and infrastructure to accomplish mission activities.

Jefferson Lab's FY04-FY08 Institutional Plan includes the following priorities:

- Execution of a world class experimental program in hadronic physics, both at the current 6 GeV energy and preparing for the anticipated 12 GeV Upgrade (Office of Nuclear Physics (NP) funding).
- Commission the 10 kW infrared and complete the 1 kW ultraviolet Free Electron Laser upgrades (Department of Defense (DOD) funding).
- Development of advanced computational techniques to solve Quantum Chromodynamics (QCD) numerically termed Lattice QCD (LQCD).

Anticipated mission evolution includes:

- Evolution of the SRF (Superconducting Radio Frequency) Institute with involvement in 12 GeV Upgrade here at Jefferson Lab plus possible work on the International Linear Collider, RIA, 8 GeV LINAC at Fermi, Superconducting LINAC at Brookhaven, and FEL work for the Navy.
- FEL 100 kW Upgrade beginning in FY06 over a five-year period (DOD funding).
- Continued expansion of the LQCD program for the next several years.

Effects on Facilities and Infrastructure:

Facilities originally built to support the 4 GeV and that now support the 6 GeV program were built with insufficient user and limited technical support space that allowed for no planned further growth. The only significant facility added since completion of the original construction was the leased space in the ARC Building. Additional technical support space is needed to adequately support the current mission.

Expected continued growth of our current program user community, growth of the FEL user community, and growth of staff associated with the above anticipated programs increases the need for both technical support and office space.

The 12 GeV upgrade will require increases in facilities and infrastructure with expansion of the Central Helium Liquifier (CHL) building, increase in capacity of Low Conductivity Water (LCW) systems, expansion of the electrical distribution systems, and additional tunnel air conditioning. The 12 GeV upgrade also includes the addition of a fourth experimental hall, counting house, and associated service buildings. These planned additions total about 26,600 square feet in buildings and other structures.

Continuation of the above programs will require additional experimental setup and storage space.

FEL 100 kW upgrade will require additional LCW and electrical utility capacity and possibly another FEL building.

Additional expansion of the LQCD program will require additional cooling to support the added computer heat loads and conditioned power.

Anticipated involvement in the International Linear Collider and other SRF programs will require facility upgrades that are not defined at this time.

Mission critical facilities, those critical to the operation of the accelerator and associated science program, are listed in Table III-5. are defined at Jefferson Lab defines a facility as critical by using those facilities included under the Lab's Highly Protected Risk Program (i.e., those facilities where a significant loss of use of the facility could cause a 3-month program delay and/or a property loss of \$1,000,000). This typically does not affect allocation of maintenance funds except if the maintenance item could disrupt operations if not repaired.

Table III-1. Mission Critical Facilities

Bldg No.	Building Name	Specific Use
8	Central Helium Liquifier	Accelerator Cryogenics
12	CEBAF Center	Office/Computer Center
18	Free Electron Laser Facility (FEL)	Other Materials R&D Test Bldg
38	South Access Bldg	Accelerator Service Bldg
53	Injector Service Bldg	Accelerator Service Bldg
58	Test Lab	Applied Physics Lab
67	North Access Bldg	Accelerator Service Bldg
90	Experimental Equipment Lab	Applied Physics Lab
94	Hall B (Incl. Beam Dump & Truck Ramp)	Accelerator R&D Lab
96	Hall C (Incl. Beam Dump & Truck Ramp)	Accelerator R&D Lab
97	Counting House	Computational Computing
101	Hall A (Incl. Beam Dump & Truck Ramp)	Accelerator R&D Lab
102	End Station Refrigeration Bldg	Accelerator Cryogenics
999	Beam Tunnel Facility	Accelerator

Major trends and staffing and user levels:

Staffing levels (SURA, State, contract labor) for the last several years have been around 700 FTE with a head count of 729 at the end of FY04. Staffing is expected to increase during 12 GeV Upgrade construction. Future updates to this plan will address details as the programs are developed. Annual Full Time Equivalent (FTE) trends are as follows:

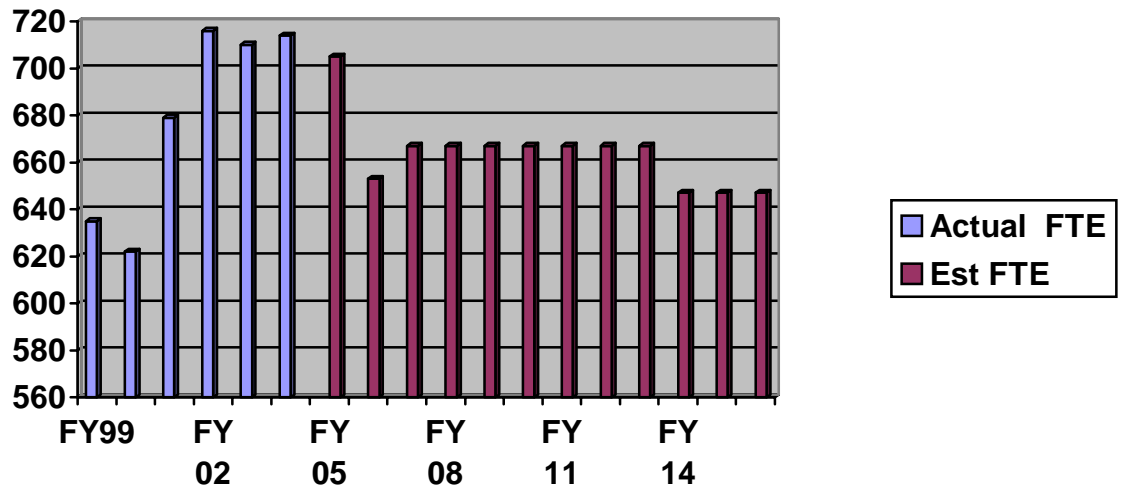


Figure III-2. Staff Trends

The User community is about 2,000 individuals, both domestic and international, with the on-site presence varying from 150 to over 400 at any given time.

IV. LAND USE PLANS

As suggested in the DOE guidance the Land Use Plan for TJNAF has been rolled up into this Ten Year Site Plan (TYSP). In order to save time and effort and to facilitate the approval process, the land use plan will continue to be a part of the TYSP annual update. Attachment 5 is the 10-Year Master Plan.

V. FACILITIES AND INFRASTRUCTURE

A. Strategic Facilities & Infrastructure (F&I) Goals and Issues

The goals of the Jefferson Lab facilities and infrastructure management plan are:

- Provide a safe, healthy, secure, “preferred” working environment for laboratory employees and visitors. Keep current with technological changes as they support the mission.
- Design facilities readily adaptable to changing research requirements and technologies.

- Maintain existing facilities sufficiently to ensure building functionality and make alterations to realize energy and cost savings.
- Provide office and technical space corresponding to manpower projections. Eliminate to the extent possible the use of trailers for office space.
- Co-locate work groups to the extent possible to enhance effectiveness.
- Eliminate substandard storage space and structures that have reached the end of their useful lives.
- Eliminate leases that do not lead to building ownership and minimize off-site leases.

Shortfalls of our current facilities to meet current mission needs have been identified. All discussions of these shortfalls with the TJNAF Director's Council fell into one of the following categories:

Inadequate technical support space. Currently staff is working out of accelerator service buildings and aging trailers with many of the groups not collocated, or not located near their work. These problems can be traced back to shortages of this type of space since original construction. The situation continually worsens due to the condition of the trailers which were intended to be a temporary space as well as an increase in staffing and evolution of the accelerator over the past several years. The trailers could be replaced, but due to cost, it is not a wise life cycle investment to use trailers to satisfy a steady state requirement. In addition, some of the technical support space currently located in service buildings will have to be relocated since those buildings will be used as originally intended for the 12 GeV Upgrade. Also, the service buildings were not designed for occupancy and therefore do not meet the goal of "preferred" working environment.

Additional experimental setup space. Due to the overwhelming success of CEBAF and increased experimental capabilities, there remains a large experimental backlog consisting of increasingly more complex setups, some taking up to six months to stage. Jefferson Lab lacks sufficient staging space to accommodate these setups. To make the best use of "machine" time, these setups occur outside the experimental halls thus minimizing transition time between experiments. In addition many of the experiments are scheduled for hall time in separate segments, which sometimes requires the setup to be removed from the hall and stored and/or modified before the next scheduled segment. Additional space would allow the Lab to increase experiment scheduling efficiency. High bays proposed as part of the two technical support buildings as well as backfilling of existing space, vacated as a result of this construction, would fulfill this need.

Storage. Jefferson Lab currently has two off-site warehouses, one on-site storage building, and nearly 70 shipping containers used for storage. Experimental equipment is typically shipped (domestic and international) to the Lab by the research-sponsoring institution for assembly. The components are collected and then moved to an experimental setup area for assembly. At the conclusion of the experiment, devices are stored for future use, disassembled and stored for return shipment to the sponsoring

labs or institutions, or excessed. Off-site storage isn't practical because of the size of the material and the relative cost to transport the material repeatedly over public roads.

There are both steady state and surge storage needs. Steady state storage requirement should be met using onsite facilities with surge requirements being met with temporary on-site structures or off-site leases.

Utilities & Infrastructure. The roadway and utility systems have been essentially unchanged since completion of the initial construction in 1992. With the increase of personnel at the site, there is a need for additional roadways to improve the safety and efficiency of internal vehicular movement. This is particularly important during periods of heightened security. Currently during these periods, vehicles have to go out one security checkpoint and enter a second to transit from one side of the campus to the other. Minimal sidewalks were part of the original construction, leaving individuals to walk on the major streets at the Lab to get from the campus to the accelerator site buildings. Visitor parking is inadequate to serve the many conferences and meetings held at the Lab.

Any excess capacity in the low conductivity and cooling water system built during the original 4 GeV construction has been utilized for the current 6 GeV state to the extent that there are shortages in several areas. In addition, the lack of sufficient emergency electrical power during Hurricane Isabel in September 2003 caused a loss of all liquid helium, which allowed the accelerator to warm up. This event caused a 5-week delay in the experimental program. NP has funded installation of an emergency generator that will protect the critical systems for power outages up to 36 hours with a future (Phase 2) project identified allowing connection of 10 MW of mobile generators for extended operation of the CHL facility.

At least twice times during the past five years the backup of stormwater on the property has been a problem. A stormwater study was completed in 2003 that identified numerous maintenance and improvement projects to sustain future development. Regulations require there not be an increase in the quantity of stormwater leaving the site as a result of new construction. Maintenance projects include cleaning of channels and will be accomplished with indirect maintenance funds. Improvements include the widening of channels and installation of three stormwater retention ponds, one of which is currently under construction to support current construction including CEBAF Center Addition Phase I. These improvements will be accomplished under the two GPP projects identified in Attachment 9.

Education Space. Jefferson Lab has from its beginning had a strong tie with the community. This is largely due to the education program the Lab delivers to primary middle and secondary school students. The demand for the program exceeds the available capacity, which is limited by the number of classrooms.

Security. Security was discussed within terms of two options for controlling access, centralized and decentralized. The centralized option would include a manned

gatehouse at the site entrance and a site perimeter fence. The decentralized option would control access at the building or area level similar to what is currently being done. Both options are actively being considered in light of local resource protection needs, practical considerations in implementing the new DOE Foreign Visits and Assignments Order, and the prevailing national security level. Facility changes have been programmed to reduce security manpower operating costs during periods of heightened security. The Lab currently lacks a single entry point due to roadway configuration. A Safeguards & Security FY05 GPP funded gate House and JLab FY05 GPP funded South Connector Road will allow, when completed in FY06, a single entrance for all vehicles other than tractor trailer trucks. Proposed future projects identified in Attachment 9 will make additional traffic flow improvements, and construct a new shipping/receiving facility at the perimeter of the site, and install a perimeter fence. Manned checkpoints will be utilized for tractor trailer trucks until the future projects are complete.

Other. Experience with SNS and *Renascence* cryomodule research and development has shown that the existing infrastructure is not configured to minimize the risk of contamination, the leading cause of poor cavity performance. Modest upgrades, particularly in the area of process controls, are expected to be adequate to support the performance needs of the 12 GeV Upgrade and RIA projects. Higher performance goals, in particular those of the International Linear Collider, will require substantial changes to the infrastructure to provide the required assurances of high-yield production.

Key Facilities and Infrastructure issues in meeting these goals are primarily driven by the large number of personnel housed in “temporary” trailers and the fact that the Lab did not have adequate technical support and user space from the beginning. Correcting this shortfall has been materially hampered by the limited funds overall for scientific and infrastructure priorities. CEBAF Center Addition Phase 1, a Science Laboratory Infrastructure (SLI) project, will greatly assist in providing needed computational and office space when completed in FY06. The shortage of computational space is not identified as a shortfall since the project is under construction.

B. F&I Condition Assessment

The Facilities Management Department manages a facilities condition assessment program that utilizes a multidisciplinary team including an architect, engineers, EH&S personnel, and building occupants to evaluate the functional condition and maintenance needs of each facility. These evaluations are performed on a three-year cycle. Results of the assessment are prioritized and either handled as a corrective work request or programmed for future funding. In 2003 and 2004 this condition assessment program utilized a consultant in lieu of in-house personnel. A combination of consultant and in-house personnel are completing the 2005 assessments. The Facility Condition Index (FCI) and projections are provided in Attachment 8.

The overall condition of the buildings, utilities, and other structures is good; however the size of the maintenance backlog (deferred maintenance) is expected to grow. The average age of the facilities is 14 years with the majority being built around the same time. As the buildings continue to age we expect major maintenance cost spikes at 20 and 25 years.

The high Asset Condition Index (ACI) value of the OSF 3000 category is driven by the low maintenance requirements of the tunnel and experimental halls relative to their Replacement Plant Value (RPV). The lowest ACI value is for our real and personal property trailers, which were intended as temporary structures and are past their life expectancy. Specific FIMS data for the various facility categories is shown below.

Table V-1. Facility Condition Assessment (FY 2004)

Category	Deferred Maintenance (DM), \$M	Facility Condition Index (FCI)	Rated Condition	Rehab & Improvement Cost (RIC), \$M	Total Rehab & Improvement Cost (TRIC) \$M
Buildings					
- DOE Owned	\$3.20	3.67%	Good	\$35.68	\$38.88
- State Owned	\$.41	5.50%	Adequate	\$.03	\$0.44
Real Property Trailers	\$4.80	99.19%	Fail	\$0	\$4.80
Personal Property Trailers	\$.55	96.1%	Fail	\$0	\$0.55
OSF – 3000 Category	\$.29	0.3%	Excellent	\$.27	\$0.56
OSF – Non 3000 Category (Utilities, Roads, etc.)	\$1.31	7.32%	Adequate	\$7.42	\$8.73
Total (DOE Buildings, real property trailers, & Non-3000 OSF)	\$9.31	8.47%	Adequate	\$43.1	\$52.41

Formal condition assessments have not been conducted in the past on individual utility systems. The below table is constructed using data in FIMS as well as recapitalization projects listed in the Integrated Facilities & Infrastructure (IFI) crosscut included as Attachment 9. Most notable are the electrical distribution recapitalization that is planned near the end of the suggested average useful life of its components; cooling tower replacement which is part of the Low Conductivity Water system which is already at the end of the suggested average useful life and additional storm water retention ponds for future development.

Table V-2. 2004 Utility Facility Condition Assessment

System	Deferred Maintenance (DM), \$M	Facility Condition Index (FCI)	Rated Condition	Rehab & Improvement Cost (RIC), \$M	Total Rehab & Improvement Cost (TRIC) \$M
Potable Water (28,065 LF)	\$0	0%	Excellent	\$ 0.3	\$ 0.3
Sanitary Sewer (17,597 LF)	\$0	0%	Excellent	\$ 0	\$ 0
Storm Drainage (4,030 LF)	\$0.2	48.6%	Fail	\$1.1	\$1.3
Electrical Distribution (4 Miles)	\$0.1	1.7%	Excellent	\$2.3	\$2.4
Low Conductivity Water (2,314 LF)	\$0.3	14.5%	Fair	\$0.6	\$0.9
Chilled Water Distribution (11,400 SF)	\$0	0%	Excellent	\$ 0	\$ 0
Telecommunications (27,168 LF)	\$0	0%	Excellent	\$0	\$ 0
Computer Networking (131 Miles)	\$0	0%	Excellent	\$0	\$ 0

Refer to Section Q of this Plan for Management of Deferred Maintenance. The need to replace real and personal property trailers and the inadequate technical space are the drivers for the technical support space and storage GPP projects.

C. Facilities Management, Space Management and Utilization

Jefferson Lab operates all facilities under a landlord-tenant arrangement where space is assigned under the direction of the Lab Director and the Director's Council to divisions, departments, and groups for specific use in support of the Lab's mission. (JLab Policy 301.04 Management of Space and Storage, Administrative Manual.)

Jefferson Lab does not use a space charge. Facilities Management is responsible for collecting space needs from Jefferson Lab divisions through a designated representative, periodic auditing of space use, and recommendations for changes in use or assignment of space. The Lab has no excess facilities. The Asset Utilization Index (AUI) for Jefferson Lab is 1.

Recommendations for changes in space assignments as well as maintenance and construction priorities are coordinated with a Lab cross-divisional Infrastructure Committee prior to recommended actions going to Director's Council.

D. Facilities Supporting Mission Activities

Jefferson Lab is a single purpose Nuclear Physics facility under the Office of Science (SC). In addition there is some support from the Commonwealth of Virginia and the DOD in the form of contracts with the Navy, Air Force, and Army.

Jefferson Lab's total future funding profiles from the SC are expected to be level except for an increase in funding requested for the 12 GeV Upgrade project. There may be some increase in DOD funding related to FEL projects during the next few years.

The Facilities Management Department, within the Administration Division is responsible for management and operation of all Jefferson Lab facilities. DOE funded facilities are listed in Attachment 4. The Lab's average age of buildings is 14 years. Typically, facility maintenance funding is allocated as an overhead item with the exception of some direct Safeguards & Security funds for maintenance of the access control system. The benefiting JLab division for improvements typically provides funding for program-dedicated facilities.

Overall Jefferson Lab's facility condition is good, and the projected trend indicates it will remain good over the next ten years. Approximately 50% of the Lab's deferred maintenance is associated with the real property trailers that also have an average age of 14 years. Over 30% of Jefferson Lab's staff and users are in real property trailers. These trailers are inadequate space, need to be replaced, and are costly to maintain. CEBAF Center Addition Phase 1, under construction and scheduled for completion in FY06, will eliminate about 45% (22,000 SF) of these trailers.

The Lab leases two Commonwealth of Virginia owned facilities (VARC & Forestry) totaling 37,643 SF for \$1 per year plus the responsibility for all associated operating and maintenance cost. In addition, the lease cost of the ARC Building from the City of Newport News is structured so the Lab is responsible for its share of the operating and maintenance cost. The maintenance costs for these three facilities are not included in the Lab's Maintenance and Infrastructure Investment (MII) calculation. We believe the two Commonwealth of Virginia owned facilities should be included in the MII calculation to accurately state the Lab's maintenance investment, since maintenance is performed on these buildings as if they were DOE owned. Even with this omission, Jefferson Lab met the 2 % MII Office of Science goal.

There are two major facility issues – inadequate space and aging real property trailers that are discussed on pages 6 and 7 in paragraph A, Strategic Facilities Goals and Issues.

Facility utilization is not an issue at Jefferson Lab, with an asset utilization index of 1. There are no excess buildings or non-utilized space. This understates the fact that many individuals work in accelerator service buildings, multiple users share desks, and labs/experimental setup areas are overcrowded.

E. Site Utility Systems

Each site utility system is described below with utility site plans shown in Attachment 6.

Potable Water System. The City of Newport News supplies potable water to the site via a 24-inch water main along Jefferson Avenue on the West boundary and along Canon Boulevard on the East boundary. One 12" tap at each of these locations provides domestic and fire suppression water at 65 psi.

The EEL, CEBAF Center and SURA Residence Facility water distribution systems consist of a 12" branch that is normally open to receive water from both the Jefferson Avenue and Canon Boulevard taps.

While the domestic water system at the Lab is fed from two directions, the end stations and the CHL are supplied from one branch off of the main header. An improvement project has been identified in Attachment 9 to provide an alternate water supply to these two critical areas in the event that one water source is disrupted.

Sanitary System. The Hampton Roads Sanitation District provides sanitary service through a lift station on Jefferson Avenue at the edge of the site. Sanitary sewage flows through a network of gravity drainpipes from the campus buildings and Jefferson Lab owned sewage lift stations serving the Accelerator Site and the Residence Facility. The existing system is adequate for existing facilities. Additional lines and lift stations will be needed for planned growth. There is no deferred maintenance for the sanitary system; however the gravity lines from the Test Lab and VARC are more than 39 years old. Cost for necessary expansion will be part of individual construction projects.

Storm Drainage System. Stormwater runoff is conveyed by a series of vegetated open storm channels and pipe culverts to either Canon Pond (east of the site) or Oyster Point Drainage Ditch (south of the site) that ultimately discharge into Big Bethel Reservoir. A small portion of the site drains along Jefferson Avenue on the west side of the site. Jefferson Lab is relatively flat and primarily hydrologic soil group D (slow infiltration rate). In 2000, there was significant amount of area flooding including Jefferson Lab due to two back-to-back hurricanes. A stormwater study was completed in February 2003 for the entire site that identified both maintenance and capital investment needs. The condition of this utility is considered adequate. Deferred maintenance is approximately \$174,000 and is planned to be completed in FY06. Capital investment plans, estimated at \$1.7 million, include construction of three retention ponds, one of which is currently under construction, and reconfiguration of existing open drainage channels. The two future GPP projects are identified in Attachment 9.

Natural Gas System. Virginia Natural Gas supplies natural gas to the site through a supplier owned 8-inch line along Jefferson Avenue and distributed on-site through separate lines to the Accelerator Site, CEBAF Center, and the VARC and is utilized at 6 buildings and 7 emergency generators. Deferred maintenance does not apply. Service for future buildings would be provided by the local utility.

Electric Power. Dominion Virginia Power provides two independent 12.47/13.2 kV services to support the site:

1. 9 MVA, 34.5/13.2 kV from the Oyster Point Industrial Substation located near the Test Lab by way of a 34.5 kV underground circuit along Jefferson Avenue from the utility's Warwick Substation. This service is used primarily for campus buildings although currently there is adequate capacity to back feed a portion of the Accelerator Site for electrical system maintenance or during power outages. With completion of CEBAF Center Addition and other planned projects, this excess capacity will no longer be available through the existing service. A third party financed project through the utility has been identified to upgrade this service through the utility provider from 9 MVA to 15 MVA. Alternate funding would be GPP.
2. 40 MVA, 34.5/12.47 kV from the CEBAF Industrial Substation located on the Accelerator Site by way of a 34.5 kV overhead line through Oyster Point Industrial Park from the utility's Warwick Substation. This service is used primarily for accelerator operations including a central chiller located in the Test Lab basement (outside the accelerator fence) that serves the accelerator service buildings.

The Test Lab Switchboard and secondary distribution system is 40 years old, greater than the average useful life of 20 years for switchboards and 25 years for power feed wiring mains. A Deferred Maintenance Reduction Initiative project has been identified in Attachment 9 to renew these components. Accelerator Site switchboards and distribution wiring is 17 years old. Deferred Maintenance Reduction Initiative and GPP projects have also been identified in Attachment 9 to renew these components.

In the event of an off-site power failure in one of the systems or during system maintenance, emergency power can be transferred by JLab personnel from the other system by way of a tie line after coordinating with the electric utility. In addition there is a separate 120/208-volt service supplying the VARC building.

In September 2003, Hurricane Isabel damaged offsite power distribution systems, which caused a power loss to the entire site for a period of three days. This power loss resulted in the total loss of helium cooling the accelerator, which disrupted the experimental schedule for approximately five weeks. As a result, the Lab has just completed installing a 500 kW emergency generator to power the Accelerator Emergency Loop and the MCC. This new generator will reduce the volume of helium loss during power outages for up to 36 hours. A more robust alternative included in this TYSP is to install electrical switchgear to allow utilization of mobile power generation to the Accelerator site totaling 10 MW for extended power outages funded using third party financing through the electric utility as identified in Attachment 9. Alternate funding would be GPP.

Jefferson Lab owns and maintains the switchgear, transformers and electric feeders downstream from the utility meters. The following emergency generators supply power to limited facilities during periods of outage:

Size	Fuel	Supplies Power to:
800 kW	Diesel	ARC Building (Leased Building)
500 kW	Diesel	Accelerator Emergency Loop
225 kW	Natural Gas	CEBAF Center
280 kW	Natural Gas	Experimental Hall Emergency Circuit
65 kW	Natural Gas	Test Lab
25 kW	Natural Gas	Bldg 87
25 kW	Natural Gas	Hall B Vacuum Pumps
20 kW	Natural Gas	Hall B Controls
20 kW	Natural Gas	VARC (Leased Building)
16 kW	Liquid Propane	CHL
12 kW	Natural Gas	Guard Shack
10 kW	Liquid Propane	FEL

Low Conductivity Water System. Low conductivity cooling water (LCW) is supplied to a variety of research equipment as a cooling medium. There are nine individual systems at Jefferson Lab ranging in size from 180 to 2000 gpm. The LCW is processed domestic water that passes through filters and de-mineralizers before entering the cooling system. The LCW circulates throughout the equipment and is monitored and polished to maintain the proper conductivity. Four systems employ mechanical oxygen scavenging to reduce the potential for copper corrosion. This class of utility also includes the Intermediate Water System (IWS) which is a closed system serving the beam dumps in buildings 91 and 95.

The overall condition of the system is excellent. Recapitalization projects include the replacement of the fibercast pipe with stainless steel and replacing the obsolete control systems. The 12 GeV Upgrade project will increase the capacity of the accelerator LCW systems to accommodate the expanded requirement. There has been some maintenance issues associated with galvanic corrosion which are being watched closely.

Chilled Water System. The Chilled Water system consists of approximately 5,500 LF of 8" Double Wall Pipe (Insulated) supply and 5,500 LF of 8" Return Piping PVC – uninsulated underground piping. The system distributes chilled water/glycol mixture from a central chiller located at the Test Lab to thirteen Accelerator Service Buildings to supply air conditioning.

Telecommunications System. The Lab currently owns and operates a Definity series model G3r switch as the primary processor node. Three additional full size switch expansion cabinets are part of the system. Each cabinet is located in a different centralized location on the Lab's property. Approximately 806 analog, 1,079 digital and 67 Hybrid telephones and Integrated Services Digital Network (ISDN) service for video

conferencing are supported by this switching system. Pager service is supplied by subcontract. Radios and PA systems are managed and maintained by in-house personnel with commercial technical backup. Long distance service is provided by FTS 2001 and a subsequent subcontract, Telcove. Local telephone service is provided by subcontract from Telcove and Verizon.

Computer Networking. Jefferson Lab is served by a single OC-3 (155 mbit/sec) Wide Area Network (WAN) connection and many Local Area Networks (LAN). The WAN connection is provided by ESnet (Energy Sciences Network). ESnet is funded by the DOE Office of Science and provides WAN connectivity for DOE-related research and laboratories. Through this network, a scientist at Jefferson Lab can connect to virtually any network in the world.

The Jefferson Lab LAN interconnects on-site computer systems, terminals, printers, and other network capable devices located in all Jefferson Lab buildings, the ARC, and the SURA/Jefferson Lab Residence facility. The LAN is comprised of 1000 mbit/sec Ethernet connections between core network devices and high bandwidth applications (data acquisition, mass storage systems, etc.) and 100 mbit/sec Ethernet connections to desktop systems, printers, and other network capable devices.

The requirements for the throughput of the WAN and LAN are determined by the data rates of experiments. Upgrades to the WAN connection and parts of the LAN may be required for future experiments. The WAN connection is being upgraded to OC192 (10 Gigabit Ethernet) by the end of 2005. Parts of the LAN will be upgraded at appropriate times to meet the requirements of future experiments.

Helium Transfer Line. A utility site plan for the helium transfer lines is shown for coordination purposes only. This line is a component of the helium liquifaction process and not considered a conventional facility utility and therefore is not included in this Ten Year Site Plan analysis.

F. Leasing

Both current leases and proposed leases are shown below.

Current Leases.**Table V-3. Current Leases**

Name	Use	SF	# Employees	Future Plans
ARC Building	Office & Lab	44,342	156	Base lease expires FY08, extend lease until CEBAF Center Addition Phase 2 is funded
VARC	Office	34,739	75	Lease cost \$1 per year; Lab is responsible for all operating and improvement costs. Continue to use indefinitely
Forestry	Office and Maintenance Shop	2,904	7	Lease cost \$1 per year; Lab is responsible for all operating and improvement costs. Continue to use indefinitely
Blue Crab	Warehouse	7,000	None	Continue until onsite Shipping/Receiving and storage facilities are constructed.
Middle Ground	Warehouse	4,478	None	Terminate lease upon completion of sufficient on-site storage

Potential Leases. Technical Support Building 1, Technical Support Building 2, and Shipping & Receiving/Storage Building are under evaluation for construction using Program GPP/Deferred Maintenance Reduction Funding and/or Lease to Own. Only Technical Support Building 1 is shown below. Technical Support Building 2 and Shipping & Receiving/Storage Building are shown on the Infrastructure Crosscut as GPP and Deferred Maintenance Reduction projects. The two technical support buildings are needed to provide adequate workspace for staff currently working in service buildings or in aging trailers, a Lab goal. These buildings also support the Lab's goals of collocating work groups near where they work. Construction of the shipping/receiving facility relocates this function from a lab building in the center of the campus to the site perimeter, correcting both security and safety concerns.

Table V-4. Potential Leases

Name	Use	SF	# Employees	Estimated Start Date
Technical Support Bldg 1	Technical Shops, offices	33,000	80	FY06

G. Other Facilities

The following facilities have been constructed for the benefit of Jefferson Lab at no cost to the Department of Energy.

Title: Jefferson Lab land

TEC: \$3,241,000

Provider/funder: City of Newport News and SURA

Description: Transfer a total of 162.5 acres of land to DOE between 1986 and 1993

Title: VARC (Virginia Agricultural Research Center) and Forestry Building

TEC: \$3,600,000

Provider/funder: Commonwealth of Virginia, College of William & Mary

Description: Long term lease of VARC and Forestry Building totaling 37,643 SF including 4.2 acres of land for \$1 per year plus operation and maintenance costs. Lab occupied space starting in 1987.

Title: Jefferson Lab Residence Facility

TEC: \$1,250,000

Provider/funder: SURA through contractual agreement

Description: This facility is owned and operated by SURA on SURA property adjacent to the site. It provides reasonably priced accommodations for researchers and other visitors that like to stay within walking distance of the JLab facilities.

Title: Applied Research Center

TEC: \$18,000,000

Provider/funder: City of Newport News

Description: Construction of a 121,200 sq. ft. office and research lab building to support the Lab and its institutional partners. Occupied in 1998, the ARC is 45% occupied by JLab, 35% by universities, and 17% by commercial tenants with a tie to JLab.

Title: FEL Facility (Free Electron Laser)

TEC: \$3,600,000

Provider/funder: Commonwealth of Virginia grant

Description: Construction of a 27,673 sq. ft. research facility for the FEL with six experimental labs was completed and occupied in July 1997. The project provided the building to house a new program built with industrial partners.

H. Disposition

Facilities planned for disposition (real property and personal property trailers) are typically the result of construction of replacement facilities. Disposition is funded under both SLI and indirect projects. Projects for elimination are as follows:

Table V-5. Disposition

Project	Facilities to be eliminated	SF	Funding	Proposed FY
Oil Storage Bldg	058B	241	Indirect	FY06
CEBAF Center Phase 1	11, 11A, 11B, Partial 16, 34 D, 34 E	22,000	SLI	FY06
Technical Support Bldg 1	10, 34A, 34B, 34C, 34F, 34G, 53A, 53B, 53C	8,200	Indirect	FY07
Technical Support Bldg 2	Remainder 16, 94A, 96D, 101B	13,700	Indirect	FY07
SRF Engineering Test Facility	Building 59	3,683	Line Item	FY08
CEBAF Center Phase 2	52A, 52B, 52C, 35, Offices in Test Lab High Bay	8,000	SLI	FY09
General Site Storage	~ 28 Transportainers	8,000	Indirect	FY11
Shipping/Receiving and Storage	Remaining Transportainers	12,160	Indirect	FY13

I. Long Term Stewardship

There are currently no excess facilities at Jefferson Lab.

J. EM Facilities – Not Applicable***K. Non-SC Facilities (Excluding EM facilities) – Not Applicable. SC owns JLab.******L. Value Engineering***

External resources are used to perform value engineering for projects greater than \$5M up to the 35% design point, and this is coordinated as part of the design review process. Decisions are made prior to proceeding past 35% designs as to which recommendations are accepted for incorporation into the project.

Value engineering for smaller projects is typically performed internally and incorporated into the design review process at 35% and 100%.

M. Five-year Sustainment Requirements

The current condition of Jefferson Lab facilities is rated good. Based on this TYSP, the Lab's facilities will remain good and we will exceed our F&I goal to maintain existing facilities sufficiently to ensure functionality. With completion of CEBAF Center Addition Phase I, Computer Center Staff and a large portion of our Users will be moved into a "preferred" working environment, another of the Lab's facility goals under Section V.A. Upon completion of the Technical Support Building 1, Technical Support Building 2, and CEBAF Center Wing D all of our staff and Users will be out of trailers. CEBAF Center Addition Phase 2 will complete the consolidation of staff in a "preferred" working environment.

On average, current indirect funded maintenance spending breaks down to the following categories:

Deferred Maintenance Projects	8%
Corrective Maintenance Projects	55%
Preventative Maintenance Projects	18%
Reconfiguration Projects (not capitalized)	19%

The completion of CEBAF Center Phase I in FY06 will reduce deferred maintenance for trailers by over \$2M. Based on our maintenance plan, about \$300K of indirect funds will be spent annually on deferred maintenance projects over the next five years. With the current funding assumptions, deferred maintenance will not be eliminated within the planning period, but facility condition will remain good.

Subcontractors perform corrective and preventative maintenance at Jefferson Lab. Spend rates exceed DOE cost of living increases of 2% and have been increasing about 4% per year due to service contract wage determinations dictated by the U.S. Department of Labor. The majority of buildings at Jefferson Lab were built between 1987 and 1992. As referenced in Whitestone Reports for life cycle cost, major expenditures occur between 15 and 25 years when mechanical and electrical systems reach the end of their service life. Current maintenance will remain about constant, except for inflation, for the next five years but should be expected to increase in the following five years.

In 2002 a \$4.2M energy savings project funded by third party financing through the Bonneville Power Administration provided for replacement of several 35-year-old chiller system components, lighting upgrades in various buildings, and the upgrade of mechanical control systems that significantly reduced deferred maintenance. Repayment on two separate loans is made using indirect operating funds. The first loan will be repaid in 2012 with the second loan being repaid in 2017.

GPP at Jefferson Lab has historically been used to fund enhancements and not for deferred maintenance projects. The majority of the Lab's deferred maintenance (over \$5.4M) is for real and personal property trailers, and is limited by the value of the trailers and not the cost to replace them with permanent structures. GPP and Operations funding requirements to replace these trailers total about \$15.1 million over a ten-year period. These projects are Technical

Support Buildings 1 and 2, General Storage Buildings, and Shipping-Receiving/Storage Building (being evaluated in FY05 for lease-to-own projects). In addition a proposed FY11 SLI project for CEBAF Center Addition Phase 2 would replace the remaining real property trailers and leased property.

In summary, the five-year sustainment requirements for FY07-FY11 as shown in the Facilities & Infrastructure Cross-cut, Attachment 9, are shown below. GPP funding is based on the expected FY06 funding and a flat budget through the five year period with a supplemental FY07 budget request of \$2 million for Technical Support Building 1. Indirect funding is based on 2% of sum of RPV for Buildings, Real Property Trailers, and OSF Non-3000s.

<u>Indirect</u>	<u>Need</u>
Deferred Maintenance Buildings	\$2.0M
Deferred Maintenance OSF Other	\$0.7M
Corrective Maintenance	\$6.9M
Preventative Maintenance	\$2.3M
Enhancements	<u>\$2.2M</u>
Total Indirect	\$14.9M
 GPP	 \$6.2M
 Deferred Maintenance Reduction Funding (SC)	 \$3.2M
 Line Item	
CEBAF Center Addition Ph 2	\$8.5M
SFR Engineering Test Facility	\$20M

N. Maintenance Program for Nuclear Facilities

Jefferson Lab does not have any facilities that fall under DOE Order 433.1, Maintenance Program for Nuclear Facilities.

O. Deferred Maintenance (DM) Reduction

Jefferson Lab conducts Condition Assessment Inspections (CAS) on a three-year cycle. Inspections have been conducted by a consultant multi-discipline team (ISES Corporation) since 2003. During on-site inspections, consultants meet with the facility users, maintenance personnel, and safety representatives. With data gathered, they develop detailed project scopes and cost estimates in three categories with a photographic log and drawings with iconography. This information is provided to Jefferson Lab in hard copy report and an electronic database. The three categories of projects are Deferred Maintenance (includes Capital Renewal project after its normal useful life), Capital Renewal, and Plant Adaptation (code compliance, regulatory changes, facility use changes, etc). Each project is assigned one of four priority classes with an associated performance period of Immediate on Six-Ten Years. Facilities Management staff reviews and integrates the CAS projects with all other identified projects (maintenance, GPP, Line Item, etc.) into a central database for all projects.

At Jefferson Lab, all facility maintenance funds are managed by the Facilities Management Department. To ensure funds are spent on the “right” projects, Jefferson Lab reviews the projects from the central database and their assigned priorities on a quarterly FY cycle. This process starts with a review committee made up of building occupants, system owners, and maintenance staff. The recommendations of this committee are forwarded to the Director’s Council Infrastructure Committee for finalization and approval. Projects critical to the Lab’s safety and projects critical for mission are given high priority. Usually, maintenance projects associated with mission critical systems (typically mechanical and electrical) are completed as corrective maintenance and do not become deferred maintenance.

Attachment 8 provides FCI historical trends and projections for FY04 through FY11. Jefferson Lab has only one building in the condition categories of poor or fail. The building is a small storage shed, 240 SF, valued at approximately \$14,000. The plan is to replace this building in FY06.

The most significant impacts to Jefferson Lab's future FCIs will be replacement of trailers with new buildings and increase of the RPV with construction of new buildings. Approximately 50% of the RPV increase is associated with the 12 GeV Upgrade. In FY06, approximately 22,000 square feet of trailers will be demolished with the occupancy of CEBAF Center Addition, Phase 1. This equates to a reduction of approximately 20% of Jefferson Lab’s current deferred maintenance.

The projections do not take into consideration any increase in deferred maintenance from future Condition Assessment Inspections (CAS). Jefferson Lab’s buildings have an average age of 14 years. Many building systems require replacement (capital renewal) on the 20-25 year cycle. As Jefferson Lab’s buildings age, funding in out years needs to increase or the Capital Renewal projects will become deferred maintenance. With a RPV increase of \$46 million, the maintenance budget will need to be increased by approximately \$900,000 to maintain the MII above 2%. Considering the new buildings will have little maintenance requirements, the \$900,000 per year should decrease the deferred maintenance in the initial years past FY08 and maintain the facilities in good condition.

P. Recapitalization

The Integrated Facilities and Infrastructure Crosscut, Attachment 9, includes a number of projects that are considered recapitalization, i.e., those projects are needed to keep existing facilities modern and relevant in an environment of changing standards and missions. The Deferred Maintenance Reduction funding discussed above is proposed to be combined with GPP funds to eliminate some of the deferred maintenance and to recapitalize the facilities. It is expected that there will be one-for-one reduction deferred maintenance to the amount of Deferred Maintenance Reduction funding received. These projects fall into the following areas and funding types:

Table V-6. FY07-FY16 Recapitalization

	Line Item (\$M)	GPP/IGPP (\$M)	Deferred Maintenance Reduction (\$M)
Office & Support	\$17.0	\$1.8	\$1.8
Technical Support Space & Experimental Setup	\$9.5	\$11.8	\$2.6
Storage		\$5.1	
Utilities & Infrastructure		\$4.6	\$3.8
Education		\$4.2	
Security		\$1.5	
Other			
12 GeV	TBD		
SRF Engineering Test Facility	\$20.0		
Totals	\$46.5	\$29.0	\$8.2

Q. Narrative for Line Item Construction Projects

12 GeV Upgrade: The conventional facilities for the 12 GeV Upgrade are required to meet three requirements (1) 12 GeV accelerator operations, (2) approximately double the central helium liquifier capacity (CHL #2), and (3) provide housing and utilities for GlueX experimental equipment. The majority of the conventional facilities to support the 12 GeV accelerator operations are the utility upgrades of low conductivity water (LCW) and power. The LCW system will be expanded to provide cooling for ARC 10 magnets, additional RF zones, and additional power supplies. New electrical substations will be installed to meet 12 GeV accelerator operations additional power requirements. To support utility system upgrades, additions to three existing accelerator buildings are required to house new LCW equipment and DC power supplies – about 3,900 square feet (SF) total. For CHL #2, the existing CHL Building will be expanded by about 4,800 SF to house compressors and the industrial cooling water (ICW) and power will be upgraded. A new experimental hall (Hall D) will be provided for GlueX. The complex will consist of an experimental hall, a counting house, beam dumps, cryogenics plant, and service buildings - about 13,500 SF. The site is located at the northeast end of the existing accelerator tunnel and includes an extension of the tunnel, approximately 4,500 SF, to house the new beam transport line and tagger magnet. Utilities include water, sewer, electricity, telecommunications, chilled water, LCW, and cryogenic distribution.

CEBAF Center Addition Phase 2. This project will provide for the construction of approximately 70,000 square feet (SF) in a double wing addition to CEBAF Center, Building 12. Wing E/F will be a three-story addition connected to the existing facility as well as a connection to the Phase I Addition on all three floors. The first and second floors primarily allow relocation of functions (library, document center, and conference

rooms) currently in leased space. The third floor will provide office space and small meeting rooms. Offsetting space has been identified from the East Tennessee Technology Park (ETTP). This project is the second of three phases to provide much needed space for world-class scientists to collaborate on various physics programs and consolidate staff currently in numerous trailers and leased office space. Relocation of the library and document center collocate the resources with the majority of the staff. The increased office space consolidates the majority of the Physics and Accelerator staff for efficient teaming needed for physics collaboration. This project is the highest priority because it moves staff out of inadequate trailer space and leased space.

SRF Engineering Test Facility: This project will provide the construction of a 20,000 SF Engineering Test Facility comprising industrial space with full crane access, clean rooms, and office space for an additional 15 to 20 staff. This is a new facility to support Superconducting Radio Frequency (SRF) technology not only for here at Jefferson Lab but major involvement work on the International Linear Collider, RIA, 8 GeV LINAC at Fermi, Superconducting LINAC at Brookhaven, and FEL work for the Navy. The initial cost estimate for this facility and equipment is \$20 million. This project includes demolition of Building 59 (Accelerator Tech Shop) which is 3,683 SF.

Test Lab Rehab. The Test Lab was constructed in 1965 by NASA and was transferred to DOE in 1987 with 110 acres. The building had been in caretaker status by NASA for a number of years prior. It is Jefferson Lab's largest facility, over 20% of the Lab's building square footage and houses approximately 75 staff for the Lab's SRF operations. With the initial construction of Jefferson Lab and then SNS cryomodule construction, operations have been set up by existing building features such as the Test Cave and are not efficient or flexible. The high bay area has three levels of mezzanines with a mix of functions including offices, labs, and storage. This limits the use of the crane in the high bay area. This project is to reconfigure the operations in the high bay area to collocate the production, R&D, and lab functions for efficiency and safety. The project also includes capital renewal of the major building systems such as mechanical and electrical, code compliance updates, and seismic upgrades. This project is expected to result in a deferred maintenance reduction of \$1.7 million

R. Performance Indicators and Measures

FY05 Metrics:

- 4.2.1 Asset Condition Index (ACI) defined as one (1) minus the ratio of Deferred Maintenance to Replacement Plant Value.
- 4.2.2 Percentage of planned facility condition assessments completed during the fiscal year.
- 4.2.3 Percentage of indirect projects completed from the planned project list for the fiscal year.

Planned FY06 Metrics:

- 4.2.4 Asset Condition Index (ACI) defined as one (1) minus the ratio of Deferred Maintenance to Replacement Plant Value.
- 4.2.5 Percentage of planned facility condition assessments completed during the fiscal year.
- 4.2.6 Percentage of indirect projects completed from the planned project list for the fiscal year.

S. Process for Development of the TYSP

The process started with an interview with the Lab Director and members of the Director's Council to identify high level facility needs to meet the current mission as well as long term mission changes. Follow-up discussions were then held with middle managers to define short term requirements for current missions and planned changes. Options for closing the gap were presented and discussed. This data was put in terms of scope and cost and then distributed for review and prioritization. The prioritized project list was then presented to the Director's Council for approval. Reference Facilities and Infrastructure Budget Datasheet, Attachment 9.

The deferred maintenance list was reviewed to verify alignment with DOE definitions for Deferred Maintenance and Rehab and Improvement Cost (RIC). Projects were prioritized based on their impact to the mission.

The Ten Year Site Plan was updated per the latest provided guidance and coordinated with the Thomas Jefferson Site Office, Oak Ridge Office, and the Office of Science prior to being submitted for approval.

T. Facility Information Management System (FIMS)

FIMS is managed completely by the Facilities Management Department. Data is updated and reviewed by an established Quality Assurance Plan. Improvements and new facilities are entered into FIMS with the completion of each project. In March 2005 Jefferson Lab completed reconciliation of capitalized costs between FIMS and MARS for projects completed in FY 2004.

Listed on the following page is a table that compares the 2003 RPVs with the 2004 RPVs with explanation of differences greater than 5%. In 2004, Jefferson Lab revised the site factor to utilize the form in the FIMS User's Guide. Three separate site factors were established – one for buildings and OSFs, one for real property trailers, and one for personal property trailers.

Table V-7. Replacement Plant Value

FIMS Asset Type	2004 RPV	2003 RPV	% Difference	Comment
DOE Buildings	\$87,129,133	\$83,963,514	3.76%	
Real Property Trailers	\$4,840,031	\$2,922,547	65.61%	1
Personal Property Trailers	\$573,175	\$519,788	10.27%	2
OSFs (3000 Category)	\$95,267,906	\$91,868,762	3.70%	
OSFs (non-3000 Category)	\$17,909,536	\$13,910,811	28.75%	3
TOTAL	\$205,719,781	\$193,185,422	6.49%	
Comments: 1. Using the FIMS Model, the square foot value increased from \$51.29 to \$98.08. Last year, Trailer City was a contractor generated value of \$83.57 per square foot. 2. Using the FIMS Model, the square foot value increased from \$23.20 to \$27.31. 3. Many 2003 values were construction costs only and did not include the Site Factor costs, which were added in the 2004 values.				

VI. SUMMARY OF RESOURCE NEEDS

A. Planning Assumptions - FY07 to FY11

This Ten Year Site Plan represents a snapshot of the Laboratory's best guess today at how the Lab's need for infrastructure projects will unfold over the next few years. Changing programmatic and budget needs and priorities will alter the projects, scope, timing, and cost estimates. Annual updates to this Plan will reflect these changes. The breadth and scope of the ten-year vision reflects an aggressive approach to addressing the evolving Laboratory infrastructure program.

Generally the Lab expects to see level operating budgets, GPP, SLI construction, and SLI Excess Facilities Disposition funding over the planning period. The exception during this period will be \$8.2M in additional funding for deferred maintenance reduction for FY07-FY10. There will also continue to be some variation in allocation of GPP versus operating funds and allocation of GPP funds for high priority projects. 12 GeV funding will be provided during the planning period and addressed in more detail in future updates of the TYSP.

Program-driven manpower requirements will drive infrastructure needs. Staffing for the current programs will be constant (within a few percentage points) with the only staffing increase during 12 GeV construction.

The FEL upgrade will continue and may lead to an operational program for the next decade demanding additional facility resources.

Within this decade, failing temporary facilities (trailers and transportainers) must be replaced, upgrades will be made to existing facilities and equipment, and additional space will be needed for program requirements identified above.

Condition and age of HVAC and LCW systems serving the Accelerator Site will require major recapitalization. Additional loads for these systems will require improvement projects. The HVAC systems in two large buildings (CEBAF Center & Counting House) will require replacement with upgrades required for systems in the Test Lab and EEL.

Information technology advancements will continue to require major upgrades to support systems, such as phone switches, computer lines, and computer storage.

We will be able to obtain an excess offset waiver for the square footage of new construction exceeding that disposed of at Jefferson Lab.

Funding and staffing will be consistent with numbers included in Attachment 10.

There will be no impact on the existing building code variances (waivers) from the transition to external regulation.

B. Planning Assumptions - FY12 to FY16

GPP and SLI funding will increase to provide needed funding to accomplish the following goals of the Ten Year Site Plan.

The Laboratory's facilities and infrastructure will be adequate to accommodate each laboratory's expected programmatic mission activities and technological changes well into the 21st century.

Facilities will be "right-sized" to the type and quality of space and equipment needed to meet mission needs. Activities and organizations that need to be co-located will be. Facilities will be readily adaptable to changing research requirements and technologies. Off-site leased space will be reduced where economically appropriate.

The Laboratory will achieve a quality of facilities that provides a "preferred" working environment for our researchers that helps attract and retain high quality staff. The laboratory will employ the latest advances in information technology to enhance worker productivity, interactions with other scientists, and the advancement of science. Quality training and conferencing facilities will be available. Visiting scientists will have access to quality office and research support facilities.

The Laboratory's F&I will provide a safe, healthy, and secure working environment for laboratory employees and visitors. Retired facilities will be removed and environmental cleanup will be completed. The Laboratory will be viewed as a good community neighbor.

Funding and staffing will be consistent with numbers included in Attachment 10 with the exception of the SRF, which would be funded by Office of Science.

F&I improvement projects will be designed and constructed to be efficient to operate and maintain while maximizing reliability.

C. Resource Table

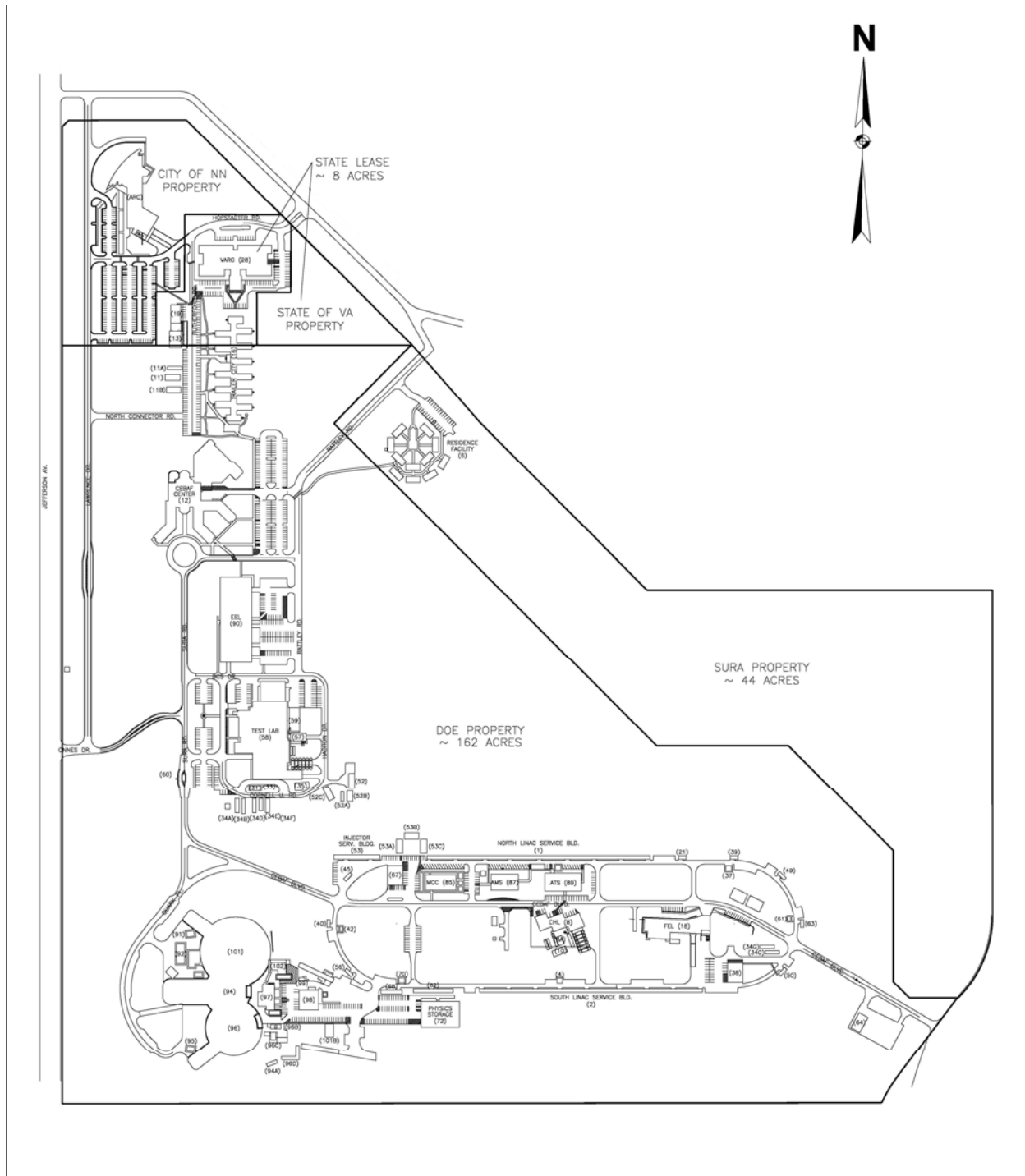
The Integrated Facilities & Infrastructure Budget datasheet (Attachment 9) outlines the funding requirements for Line item, GPP, maintenance, and excess facility for the Plan period. Figures for 12 GeV conventional facilities have not been determined at this date. Operating lease to own costs have been shown to demonstrate impact on the Laboratory's total budget.

Table VI. Facilities Funding Needs FY2004-FY2016 (M\$)

(\$ in Millions)	GPP Projects	GPP Projects (Non-NP Funds)	Line Item Projects	Additional Operating Funds (Lease to Own)
FY2004 Budget	2.1	0	9.0	0
FY2005 Budget	0.8	0.3	0	0
FY2006 Target	1.0	0.3	0	0
FY2007 Request	3.0	0.3	0	0
FY2008 Target	0.8	0	10.0	0.2
FY2009 Target	0.8	0	10.0	0.3
FY2010 Target	0.8	0	0	0.3
FY2011 Target	0.8	0	8.5	0.3
FY2012 Required	4.3	0	8.5	0.3
FY2013 Required	4.5	0	0	0.3
FY2014 Required	4.8	0	9.5	0.3
FY2015 Required	4.7	0	0	0.3
FY2016 Required	4.6	0	0	0.3
Total Facilities Plan	33.0	0.9	55.5	2.6

VII. SUMMARY OVERVIEW AT TJNAF

Total Building Space (gross ft²)	407,191 (9 th largest)
Buildings	62 (7 th largest)
Largest Occupied Building (gross ft²): Test Lab (Bldg #058)	95,828 SF
Trailers, number of:	113
Real Property	43
Personal Property	70
Wooden Buildings	8
Excess Facilities:	N/A
Uncontaminated	N/A
Contaminated	N/A
Excess Building Space Removed in FY04	N/A
Replacement Plant Value (RPV): Total	\$205,719,781
Programmatic (OSF 3000 category)	\$95,267,906
Non-Programmatic (used for calculating Indices)	\$110,451,875
Landlord Program	SC Nuclear Physics
Age of Buildings: Average	14 years
% of space older than 40 years	0
% of space 30 years or younger	79.10%
Maintenance Investment Index (MII) & Maintenance Funding	
FY 03	2.2% (\$2,252)
FY 04	3.0% (\$3,261)
FY 05 (estimate)	2.1% (2,457)
FY 06 (estimate)	2.0% (2,572)
FY 07 (estimate)	2.0% (2,976)
Deferred Maintenance (DM) Trend	
DM 2003	\$12,555,919
DM 2004	\$9,598,380
DM 2005 (estimate)	\$9,900,000
DM 2006 (estimate) *Decrease due to completion of CEBAF Center Addition	\$7,400,000
DM 2007 (estimate)	\$7,100,000
Total Summary Condition (DM + RIC) *:	\$52,969,178
Deferred Maintenance (DM)	\$9,598,380
Rehab and Improvement Cost (RIC)	\$43,370,798
*Doesn't include personal property trailers	
Total Summary Condition Index (TSCI): (percent of Total RPV) *	25.8%
Facility Condition Index (FCI) (based on DM)	4.7%
Rehab & Improvement Cost Index (based on RIC)	21.1%
*Doesn't include personal property trailers	
ACI (Asset Condition Index from RPAM Order) (1-FCI)	.95 (good)
AUI (Asset Utilization Index from RPAM Order)	1.0 (excellent)
Leased assets:	
Square footage: Total	93,543 sf
Office	63,681 sf
Other	29,862 sf
Annual Lease Costs:	\$649,336



Attachment 1. Existing Site Plan



Attachment 2. Jefferson Lab Site Photo



Commonwealth Funded FEL Facility



City of Newport News Applied Research Center (ARC)

Attachment 3. Picture of ARC and FEL Buildings

List of Facilities
TJNAF

TJNAF 10 Year Site Plan, May 2005

PROPERTY TYPE	PROP ID	PROPERTY NAME	MARS ASSET TYPE	OWNED OR LEASED	Gross SF	2004	2004 DEFERRED MAINT. (DM)	2004 REHAB COST (RIC)	AGE (YRS)	SUMMARY CONDITION
						REPLACEMENT PLANT VALUE (RPV)				
Building	008	Central Helium Liquifier	501	Owned	16,971	\$8,671,776	\$50,675	\$46,973	15	Excellent
Building	008A	CHL PUMP HOUSE	501	Owned	731	\$548,921	\$4,152	\$0	12	Excellent
Building	012	CEBAF Center	501	Owned	66,277	\$10,860,103	\$183,473	\$23,698,622	16	Excellent
Building	013	PE STORAGE SHED	501	Owned	2,990	\$169,958	\$1,869	\$0	6	Excellent
Building	016A	STORAGE SHED BEAMS	501	Owned	68	\$3,865	\$0	\$0	11	Excellent
Building	018	Free Electron Laser Building	501	Owned	31,176	\$7,324,416	\$8,589	\$22,082	8	Excellent
Building	031	Acid Building	501	Owned	1,071	\$291,904	\$3,193	\$100,000	16	Excellent
Building	033	Chemical Storage	501	Owned	612	\$166,802	\$830	\$0	16	Excellent
Building	052	Test Lab Annex	501	Owned	1,326	\$333,551	\$5,917	\$52,744	40	Excellent
Building	054	Radcon Calibration	501	Owned	1,017	\$255,823	\$0	\$0	11	Excellent
Building	054A	PROPERTY STORAGE CANOPY	501	Owned	540	\$30,695	\$519	\$0	11	Excellent
Building	057	Cryogenics Test Facility	501	Owned	2,301	\$578,809	\$5,710	\$0	17	Excellent
Building	058	Test Lab	501	Owned	95,828	\$24,105,214	\$1,977,598	\$9,219,707	40	Adequate
Building	058B	STORAGE SHED	501	Owned	241	\$13,699	\$13,699	\$0	40	Fail
Building	059	Accelerator Tech Shop	501	Owned	3,683	\$448,762	\$15,468	\$0	17	Good
Building	060	GUARD HOUSE	501	Owned	160	\$26,695	\$1,557	\$0	11	Adequate
Building	062	Canon Guard Shack	501	Owned	24	\$40,156	\$727	\$0	6	Excellent
Building	072	Physics Storage Building	501	Owned	20,415	\$1,160,430	\$11,236	\$14,726	7	Excellent
Building	085	Machine Control Center	501	Owned	7,625	\$1,716,279	\$79,801	\$5,500	15	Good
Building	087	Accel Maintenance & Support Bldg	501	Owned	6,720	\$818,810	\$11,754	\$65,057	10	Excellent
Building	089	ATS Building	501	Owned	10,152	\$1,236,988	\$8,170	\$88,295	8	Excellent
Building	090	Experimental Equipment Lab	501	Owned	53,997	\$9,600,614	\$521,262	\$753,153	15	Adequate
Building	090A	Storage Shed	501	Owned	434	\$24,669	\$1,018	\$0	7	Good
Building	090B	Storage Shed	501	Owned	510	\$28,989	\$0	\$0	2	Excellent
Building	096B	HALL B GAS SHED	501	Owned	693	\$125,476	\$1,557	\$0	10	Excellent
Building	096C	HALL C GAS SHED	501	Owned	96	\$17,382	\$363	\$0	10	Good
Building	097	Counting House	501	Owned	16,716	\$4,204,854	\$17,916	\$875,956	12	Excellent
Building	098	Cryo Weld Shop/Service Bldg	501	Owned	6,164	\$1,013,685	\$20,344	\$4,446	12	Good
Building	101A	HALL A GAS SHED	501	Owned	360	\$65,182	\$571	\$0	9	Excellent
Building	102	End Station Refrigeration Bldg	501	Owned	3,040	\$550,427	\$19,599	\$5,938	12	Good
Building	110	SMOKERS SHACK (28)	501	Owned	54	\$5,743	\$0	\$0	12	Excellent
Building	111	SMOKERS SHACK (16)	501	Owned	54	\$5,743	\$0	\$0	12	Excellent

List of Facilities
TJNAF

TJNAF 10 Year Site Plan, May 2005

PROPERTY TYPE	PROP ID	PROPERTY NAME	MARS ASSET TYPE	OWNED OR LEASED	Gross SF	2004 REPLACEMENT PLANT VALUE (RPV)	2004 DEFERRED MAINT. (DM)	2004 REHAB COST (RIC)	AGE (YRS)	SUMMARY CONDITION
Building	112	SMOKERS SHACK (12)	501	Owned	54	\$5,743	\$0	\$0	12	Excellent
Building	113	SMOKERS SHACK (90)	501	Owned	54	\$5,743	\$0	\$0	12	Excellent
Building	114	SMOKERS SHACK(85)	501	Owned	54	\$5,743	\$0	\$0	12	Excellent
Building	115	SMOKERS SHACK (87/89)	501	Owned	54	\$5,743	\$0	\$0	12	Excellent
Building	116	SMOKERS SHACK (97)	501	Owned	54	\$5,743	\$0	\$0	12	Excellent
Building	001	NORTH LINAC	680	Owned	12,850	\$1,600,596	\$57,560	\$9,269	15	Good
Building	002	SOUTH LINAC	680	Owned	12,850	\$1,600,596	\$59,117	\$9,269	15	Good
Building	004	EXIT STAIR 4	680	Owned	487	\$199,909	\$5,828	\$351	15	Good
Building	007	EXIT STAIR 1	680	Owned	487	\$199,909	\$5,398	\$351	15	Good
Building	021	NORTH EXTRACTOR SVS BLDG	680	Owned	460	\$78,536	\$3,506	\$332	15	Good
Building	037	EXIT STAIR 2	680	Owned	487	\$199,909	\$9,462	\$351	15	Good
Building	038	SOUTH ACCESS BUILDING	680	Owned	6,075	\$2,754,837	\$21,182	\$348,382	15	Excellent
Building	039	EAST ARC SVS BLDG.	680	Owned	460	\$78,536	\$2,232	\$332	15	Good
Building	040	WEST ARC SVS BLDG	680	Owned	460	\$78,536	\$2,751	\$332	15	Good
Building	042	EXIT STAIR 6	680	Owned	259	\$106,317	\$2,351	\$187	15	Good
Building	045	WEST ARC SVS BLDG	680	Owned	548	\$93,560	\$2,803	\$395	15	Good
Building	049	EAST ARC SVS BLDGS	680	Owned	548	\$93,560	\$4,535	\$395	15	Good
Building	050	EAST ARC SVS BLDG	680	Owned	548	\$93,560	\$4,328	\$395	15	Good
Building	053	Injector Service Bldg	680	Owned	3,150	\$505,733	\$4,331	\$2,272	15	Excellent
Building	056	WEST ARC SVS BLDG	680	Owned	460	\$78,536	\$3,322	\$332	15	Good
Building	061	EXIT STAIR 3	680	Owned	259	\$106,317	\$2,076	\$187	15	Excellent
Building	063	EAST ARC SVS BLDG	680	Owned	460	\$78,536	\$2,855	\$332	15	Good
Building	067	NORTH ACCESS BUILDING	680	Owned	6,075	\$2,673,784	\$12,110	\$348,382	15	Excellent
Building	068	WEST ARC SVS BLDG	680	Owned	1,217	\$207,778	\$3,478	\$878	15	Excellent
Building	070	EXIT STAIR 5	680	Owned	487	\$199,909	\$5,828	\$351	15	Good
Building	082	SOUTH EXTRACTOR SVS BLDG	680	Owned	2,289	\$285,118	\$9,058	\$1,651	15	Good
Building	091	BEAM DUMP COOLING BLDG.	680	Owned	630	\$426,810	\$1,557	\$454	12	Excellent
Building	092	SERVICE BLDG	680	Owned	2,487	\$399,288	\$2,180	\$0	12	Excellent
Building	095	BEAM DUMP COOLING BLDG	680	Owned	630	\$426,810	\$3,114	\$454	12	Excellent
Building	099	EXIT STAIRWELL	680	Owned	212	\$87,024	\$1,557	\$153	15	Excellent
Building	019	FM Maintenance Shop		Leased	2,904	\$392,904	\$21,106	\$0	40	
Building	028	VARC		Leased	34,739	\$6,995,207	\$385,242	\$33,331	40	

List of Facilities
TJNAF

TJNAF 10 Year Site Plan, May 2005

PROPERTY TYPE	PROP ID	PROPERTY NAME	MARS ASSET TYPE	OWNED OR LEASED	Gross SF	2004 REPLACEMENT PLANT VALUE (RPV)	2004 DEFERRED MAINT. (DM)	2004 REHAB COST (RIC)	AGE (YRS)	SUMMARY CONDITION
Building	ARC	Applied Research Center		Leased	44,342		\$38,477		7	
RP Trailer	010	Cryo Trailer	501	Owned	1,187	\$116,425	\$116,425		15	Fail
RP Trailer	011	Physics Trailer	501	Owned	1,187	\$116,425	\$116,425		12	Fail
RP Trailer	011A	Accelerator Trailer	501	Owned	672	\$65,912	\$65,912		17	Fail
RP Trailer	011B	Accelerator Trailer	501	Owned	1,328	\$130,255	\$130,255		16	Fail
RP Trailer	016	Trailer City	501	Owned	27,595	\$2,706,618	\$2,766,644		19	Fail
RP Trailer	034A	Accel. Tech.	501	Owned	753	\$73,857	\$73,857		18	Fail
RP Trailer	034B	Accel Tech Trailer B	501	Owned	753	\$73,857	\$73,857		18	Fail
RP Trailer	034C	Building Trailer was 15	501	Owned	660	\$64,735	\$64,735		16	Fail
RP Trailer	034D	User Liaison Group Trailer	501	Owned	660	\$64,735	\$64,735		18	Fail
RP Trailer	034E	User Liaison Group Trailer	501	Owned	517	\$50,709	\$50,709		17	Fail
RP Trailer	034F	Accel Tech Trailer F	501	Owned	660	\$64,735	\$64,735		18	Fail
RP Trailer	034G	User Group Trailer	501	Owned	660	\$64,735	\$64,735		15	Fail
RP Trailer	035	Accelerator EH&S Trailer	501	Owned	1,676	\$164,388	\$164,388		17	Fail
RP Trailer	052A	Radiation Control Trailer	501	Owned	661	\$64,833	\$64,833		14	Fail
RP Trailer	052B	Radiation Control Trailer	501	Owned	1,322	\$129,667	\$129,667		10	Fail
RP Trailer	052C	Radcon Training Center	501	Owned	1,327	\$130,157	\$130,157		11	Fail
RP Trailer	053A	Accel Installation Trailer	501	Owned	1,187	\$116,425	\$116,425		10	Fail
RP Trailer	053B	Accel Installation Trailer	501	Owned	1,187	\$116,425	\$116,425		10	Fail
RP Trailer	053C	Accel Installation Trailer	501	Owned	1,187	\$116,425	\$116,425		10	Fail
RP Trailer	054B	FM Equipment Canopy	501	Owned	400	\$39,233	\$0		3	Excellent
RP Trailer	094A	Physics Trailer Hall B	501	Owned	649	\$63,656	\$63,656		11	Fail
RP Trailer	096D	Install Trailer Hall B	501	Owned	1,295	\$127,018	\$127,018		12	Fail
RP Trailer	101B	Hall A Tech Trailer	501	Owned	1,823	\$178,806	\$178,806		8	Fail
PP Trailer	092A	Facilities Storage Shed	725	Owned	192	\$5,243	\$104		7	Excellent
PP Trailer	092B	Facilities Storage Shed	725	Owned	192	\$5,243	\$104		7	Excellent
PP Trailer	801	Container F21923	725	Owned	280	\$7,646	\$7,646		25	Fail
PP Trailer	802	Container Physics (90)	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	803	Container SNS	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	804	Container	725	Owned	320	\$8,738	\$8,738		20	Fail
PP Trailer	805	Container	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	806	Container	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	807	Container	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	808	Container F24198	725	Owned	280	\$7,646	\$7,646		36	Fail
PP Trailer	809	Container F24319	725	Owned	280	\$7,646	\$7,646		36	Fail
PP Trailer	810	Container F2667	725	Owned	320	\$8,738	\$8,738		37	Fail
PP Trailer	811	Container f219267	725	Owned	280	\$7,646	\$7,646		37	Fail
PP Trailer	812	Container F27496	725	Owned	280	\$7,646	\$7,646		37	Fail

List of Facilities
TJNAF

TJNAF 10 Year Site Plan, May 2005

PROPERTY TYPE	PROP ID	PROPERTY NAME	MARS ASSET TYPE	OWNED OR LEASED	Gross SF	2004 REPLACEMENT PLANT VALUE (RPV)	2004 DEFERRED MAINT. (DM)	2004 REHAB COST (RIC)	AGE (YRS)	SUMMARY CONDITION
PP Trailer	813	Container F2808	725	Owned	320	\$8,738	\$8,738		36	Fail
PP Trailer	814	Container F2629	725	Owned	320	\$8,738	\$8,738		28	Fail
PP Trailer	815	Container F24197	725	Owned	280	\$7,646	\$7,646		37	Fail
PP Trailer	816	Container F28065	725	Owned	320	\$8,738	\$8,738		37	Fail
PP Trailer	817	Container F219809	725	Owned	320	\$8,738	\$8,738		37	Fail
PP Trailer	818	Container F219266	725	Owned	320	\$8,738	\$8,738		25	Fail
PP Trailer	819	Container F219292	725	Owned	320	\$8,738	\$8,738		37	Fail
PP Trailer	820	Container F219281	725	Owned	320	\$8,738	\$8,738		37	Fail
PP Trailer	821	Container F219283	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	822	Container F216946	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	823	Container F219278	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	824	Container F219205	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	825	Container F219206	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	826	Container F219207	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	827	Container F219208	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	828	Container F2 19209	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	829	Container F219210	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	830	Container F2 19211	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	831	Container F219212	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	832	Container	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	833	Container	725	Owned	320	\$8,738	\$8,738		20	Fail
PP Trailer	834	Container	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	835	Container F209598	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	836	Container F28334	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	837	Container F27925	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	838	Container F2192654	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	839	Container F208910	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	840	Container F28063	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	841	Container F210791	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	842	Container F219765	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	843	Container F217966	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	844	Container F23501	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	845	Container F23502	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	846	Container 4316	725	Owned	280	\$7,646	\$7,646		32	Fail
PP Trailer	847	Transportainer F219284	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	848	Container F219924	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	849	Container F219276	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	850	Container F219277	725	Owned	320	\$8,738	\$8,738		35	Fail

List of Facilities
TJNAF

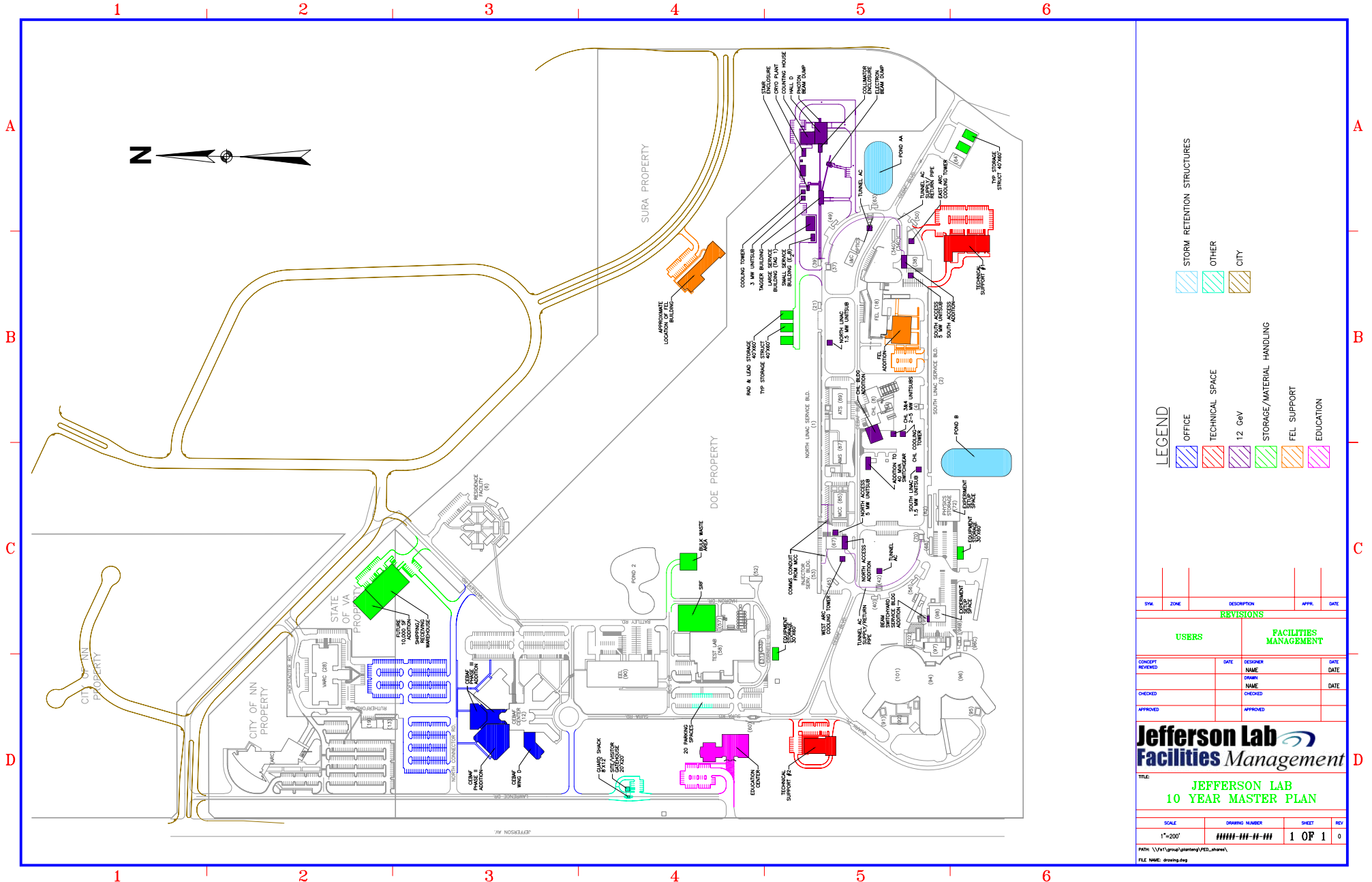
TJNAF 10 Year Site Plan, May 2005

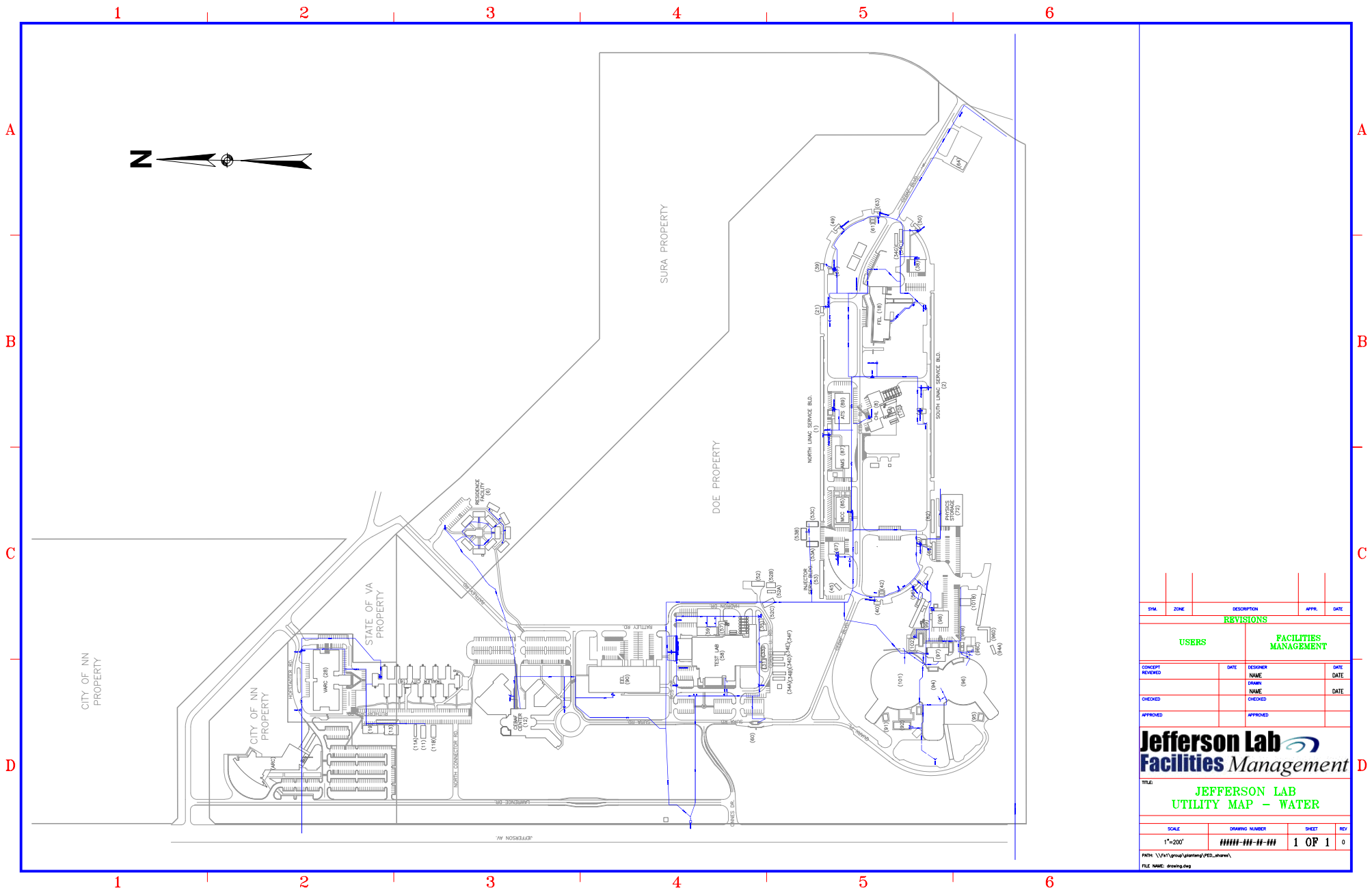
PROPERTY TYPE	PROP ID	PROPERTY NAME	MARS ASSET TYPE	OWNED OR LEASED	Gross SF	2004 REPLACEMENT PLANT VALUE (RPV)	2004 DEFERRED MAINT. (DM)	2004 REHAB COST (RIC)	AGE (YRS)	SUMMARY CONDITION
PP Trailer	851	Container F219301	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	852	Container F219301	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	856	Container F219286	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	857	Container F219280	725	Owned	280	\$7,646	\$7,646		39	Fail
PP Trailer	858	Container F219279	725	Owned	280	\$7,646	\$7,646		37	Fail
PP Trailer	859	Container F2809	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	860	Container F24344	725	Owned	280	\$7,646	\$7,646		27	Fail
PP Trailer	861	Container F2628	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	862	Container F24200	725	Owned	280	\$7,646	\$7,646		33	Fail
PP Trailer	863	Container F209956	725	Owned	280	\$7,646	\$7,646		35	Fail
PP Trailer	864	Container SNS	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	865	Container 865	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	866	Container 866	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	867	Container 867	725	Owned	320	\$8,738	\$8,738		35	Fail
PP Trailer	868	Container Physics	725	Owned	160	\$4,369	\$4,369			Fail
PP Trailer	869	Container Hall A869	725	Owned	320	\$8,738	\$8,738			Fail
PP Trailer	870	Container Hall A 870	725	Owned	320	\$8,738	\$8,738			Fail
PP Trailer	TENI	Helios Storage Tent	725	Owned	1,200	\$12,188	\$0		5	Excellent
OSF	SITE PREPARATION	Site Preparation	460	Owned	0	\$2,969,902	\$20,952	\$31,805	18	
OSF	STORM DRAINAGE	Sitewide Storm Drainage System	460	Owned	0	\$357,882	\$173,869	\$1,572,300	18	
OSF	PARKING	Sitewide Parking	470	Owned	0	\$1,464,152	\$0	\$419,326	19	
OSF	ROADS	Sitewide Roads	470	Owned	0	\$2,640,515	\$248,988	\$418,413	18	
OSF	SIDEWALKS	Sitewide Sidewalks	470	Owned	0	\$219,029	\$39,163	\$86,357	15	
OSF	FENCING	Accel Site Security Fence	480	Owned	0	\$447,378	\$0	\$600,000	18	
OSF	014	Cooling Tower	550	Owned	0	\$515,452	\$112,500	\$0	15	
OSF	044	Cooling Tower	550	Owned	0	\$389,028	\$112,500	\$33,333	15	
OSF	065	Cooling Tower	550	Owned	0	\$389,028	\$112,500	\$43,333	15	
OSF	093	Cooling Tower	550	Owned	0	\$389,028	\$112,500	\$33,334	12	
OSF	103	ESR Cooling Tower	550	Owned	0	\$163,388	\$0	\$0	3	
OSF	BLOCK HOUSE	RADCON Block Structure	550	Owned	0	\$64,435	\$0	\$0	14	
OSF	COMM	Telecommunication	610	Owned	0	\$1,470,845	\$0	\$200,000	21	
OSF	ELECTRICIAL SYSTEM	Site Wide Elect Distribution System	615	Owned	0	\$2,664,963	\$45,000	\$3,368,649	18	
OSF	SEWAGE SYSTEM	Sitewide Sewage System	640	Owned	0	\$395,487	\$0	\$0	18	

List of Facilities
TJNAF

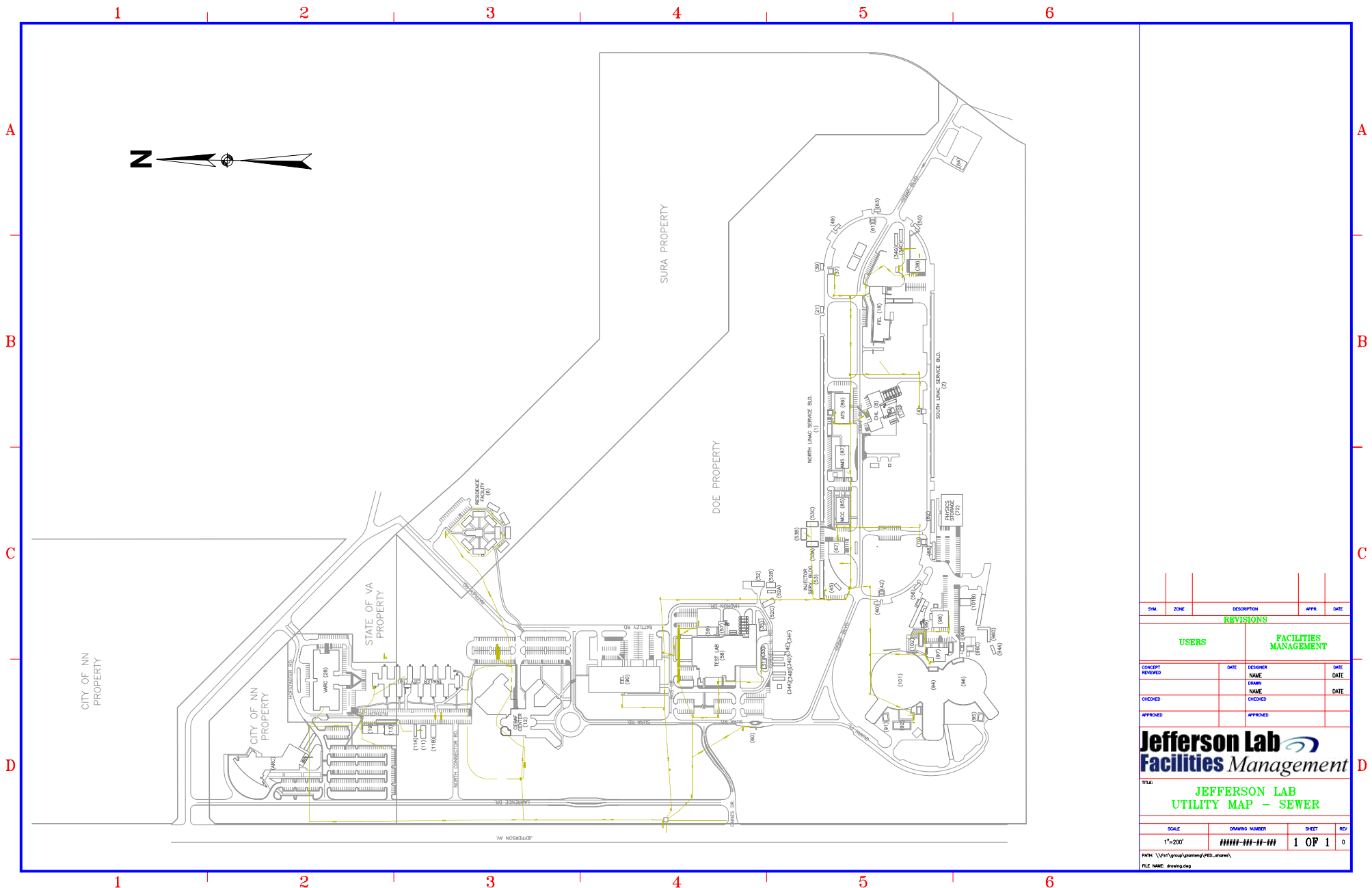
TJNAF 10 Year Site Plan, May 2005

PROPERTY TYPE	PROP ID	PROPERTY NAME	MARS ASSET TYPE	OWNED OR LEASED	Gross SF	2004 REPLACEMENT PLANT VALUE (RPV)	2004 DEFERRED MAINT. (DM)	2004 REHAB COST (RIC)	AGE (YRS)	SUMMARY CONDITION
OSF	LCW SYSTEM	Low Conductivity Water System	650	Owned	0	\$2,296,828	\$333,127	\$611,040	15	
OSF	MONITORING WELLS	Boundary Radiation Monitor Wells	650	Owned	0		\$0	\$0	16	
OSF	POTABLE WATER SYSTEM	Sitewide Potable Water System	650	Owned	0	\$1,072,196	\$0	\$0	18	
OSF	094	Hall B	680	Owned	17,706	\$11,665,737	\$49,103	\$12,772	12	
OSF	096	Hall C	680	Owned	28,415	\$21,218,824	\$72,390	\$20,496	12	
OSF	101	Hall A	680	Owned	34,861	\$24,758,990	\$64,902	\$20,369	12	
OSF	999	Beam Tunnel Facility	680	Owned	111,810	\$37,624,355	\$100,000	\$220,285	15	
RP - Real Property PP - Personal Property										

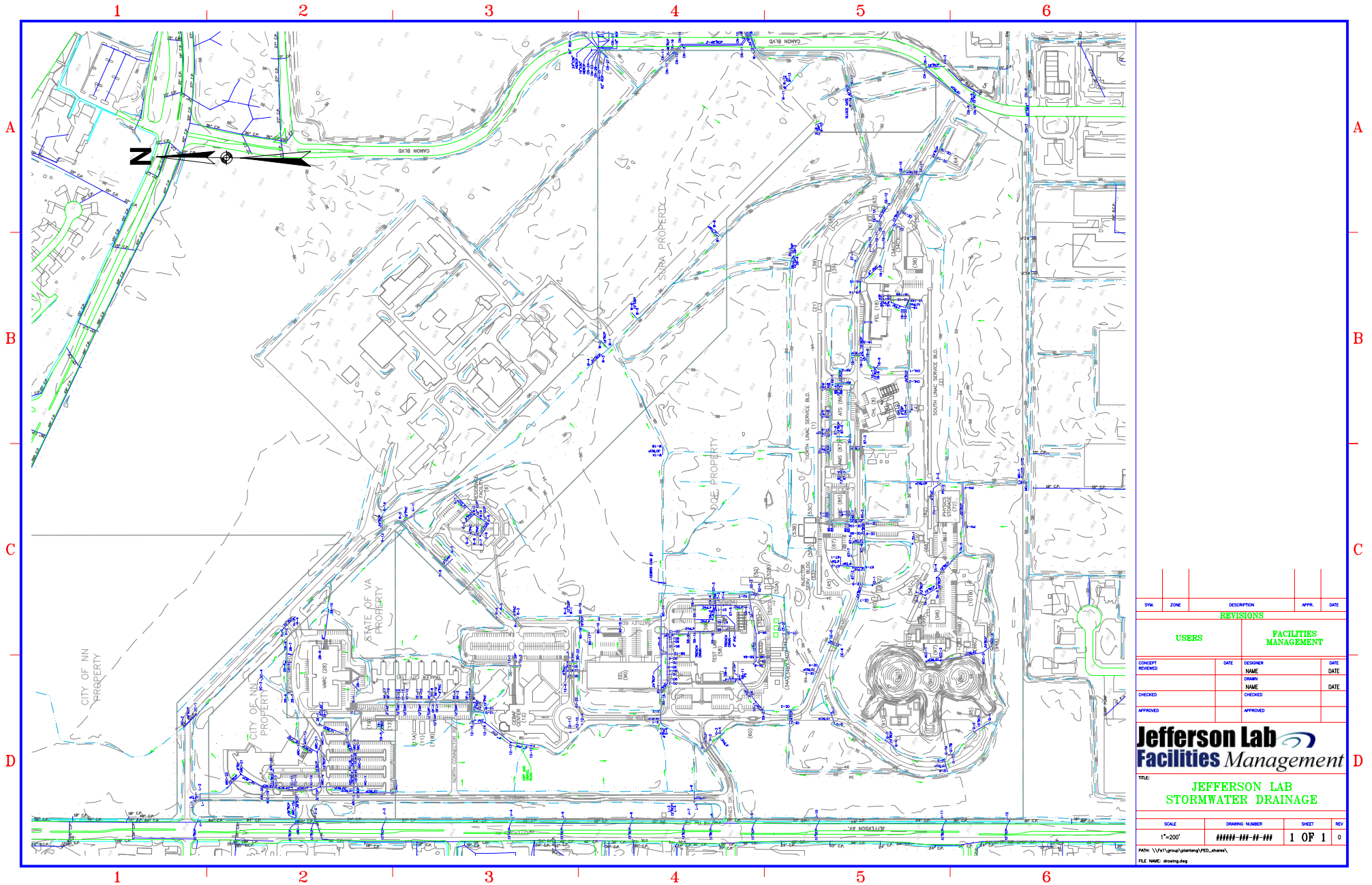




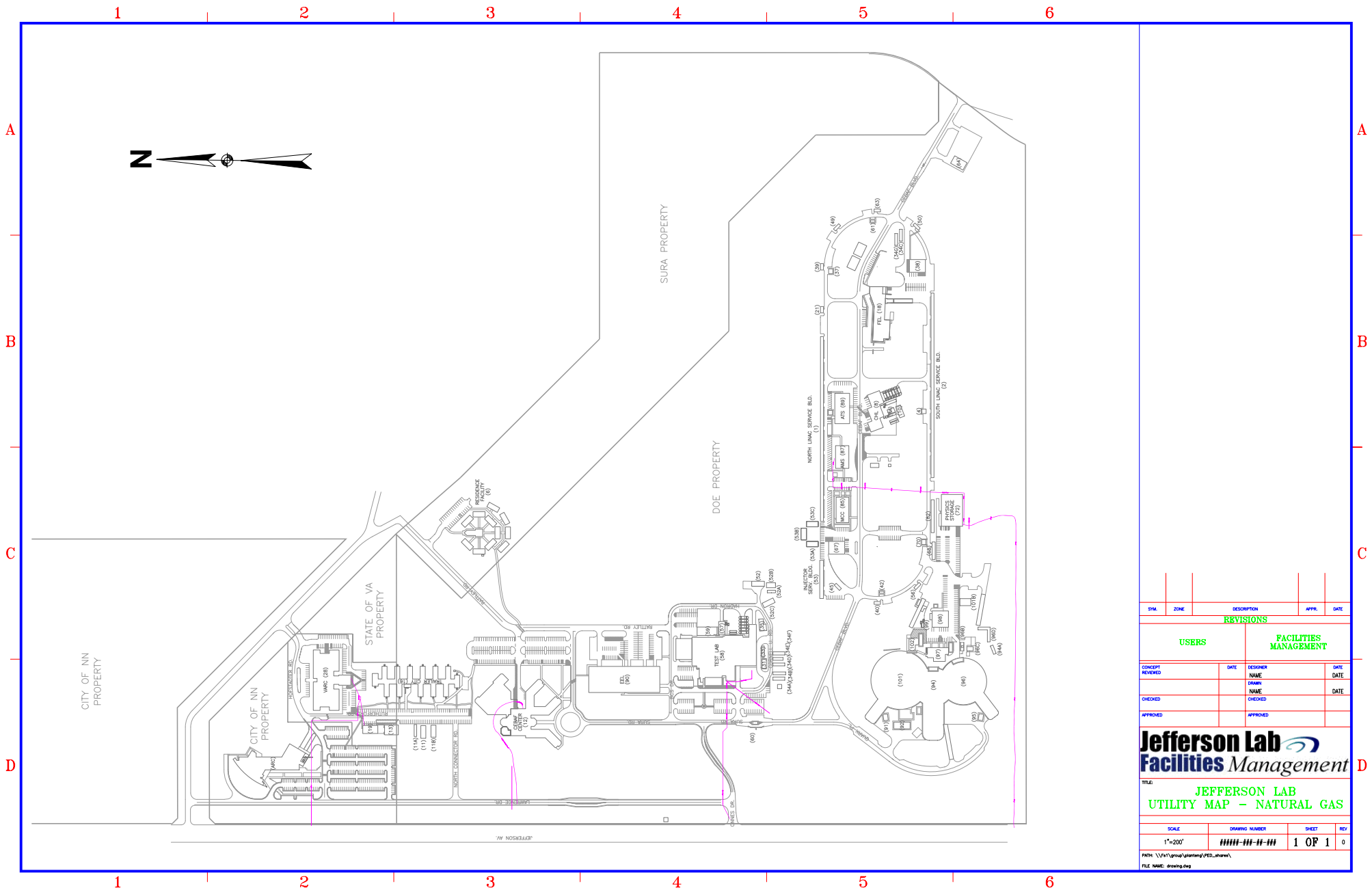
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REVISIONS				
USERS		FACILITIES MANAGEMENT		
CONCEPT REVIEWED	DATE	DESIGNER NAME	DATE	
CHECKED		DRAWN NAME	DATE	
APPROVED		APPROVED		
Jefferson Lab Facilities Management				
TITLE: JEFFERSON LAB UTILITY MAP - WATER				
SCALE	DRAWING NUMBER	SHEET	REV	
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SYN	ZONE	DESCRIPTION	APPR.	DATE
REVISIONS				
USERS		FACILITIES MANAGEMENT		
CONCEPT REVIEWED	DATE	DESIGNER NAME	DATE	
CHECKED		DRAWN NAME	DATE	
APPROVED		APPROVED		
Jefferson Lab Facilities Management				
TITLE: JEFFERSON LAB UTILITY MAP - SEWER				
SCALE	DRAWING NUMBER	SHEET	REV	
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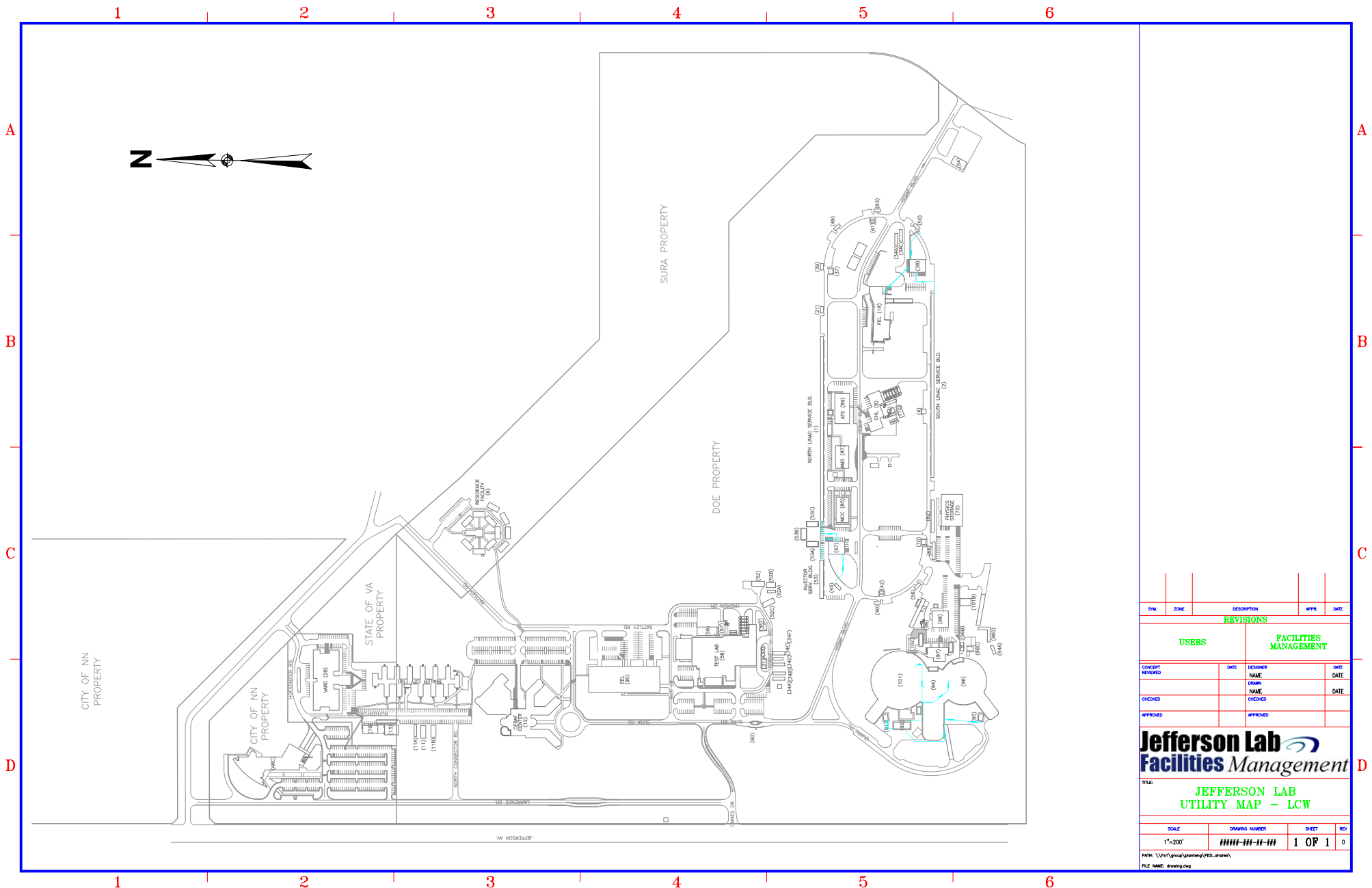


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REVISIONS				
USERS		FACILITIES MANAGEMENT		
CONCEPT REVIEWED	DATE	DESIGNER NAME	DATE	
CHECKED		DRAWN NAME	DATE	
APPROVED		CHECKED	DATE	
APPROVED		APPROVED		
Jefferson Lab Facilities Management				
JEFFERSON LAB STORMWATER DRAINAGE				
TITLE:				
SCALE	DRAWING NUMBER	SHEET	REV	
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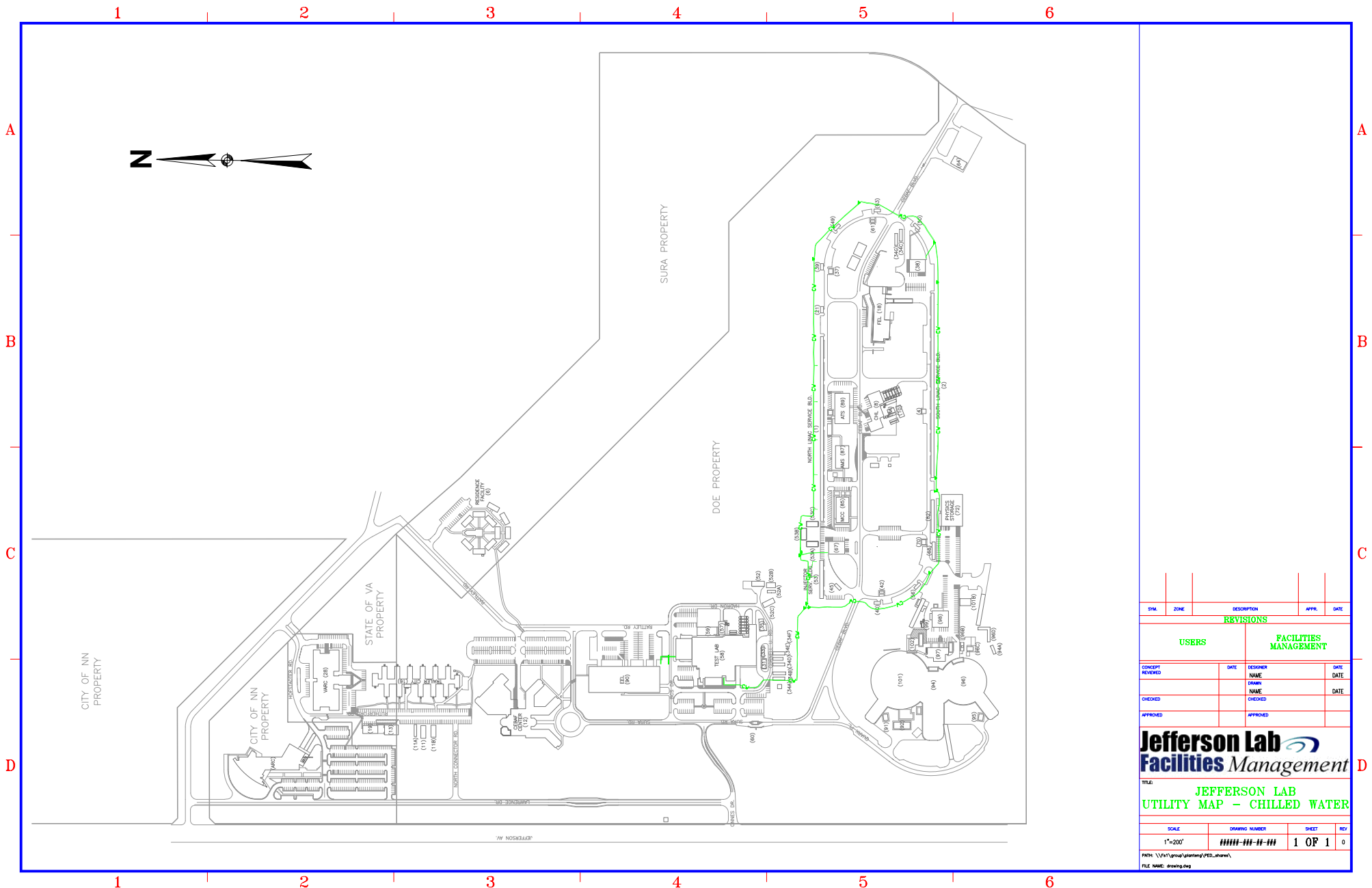


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REVISIONS				
USERS		FACILITIES MANAGEMENT		
CONCEPT REVIEWED	DATE	DESIGNER NAME	DATE	
CHECKED		DRAWN NAME	DATE	
APPROVED		APPROVED		
Jefferson Lab Facilities Management				
TITLE: JEFFERSON LAB UTILITY MAP - NATURAL GAS				
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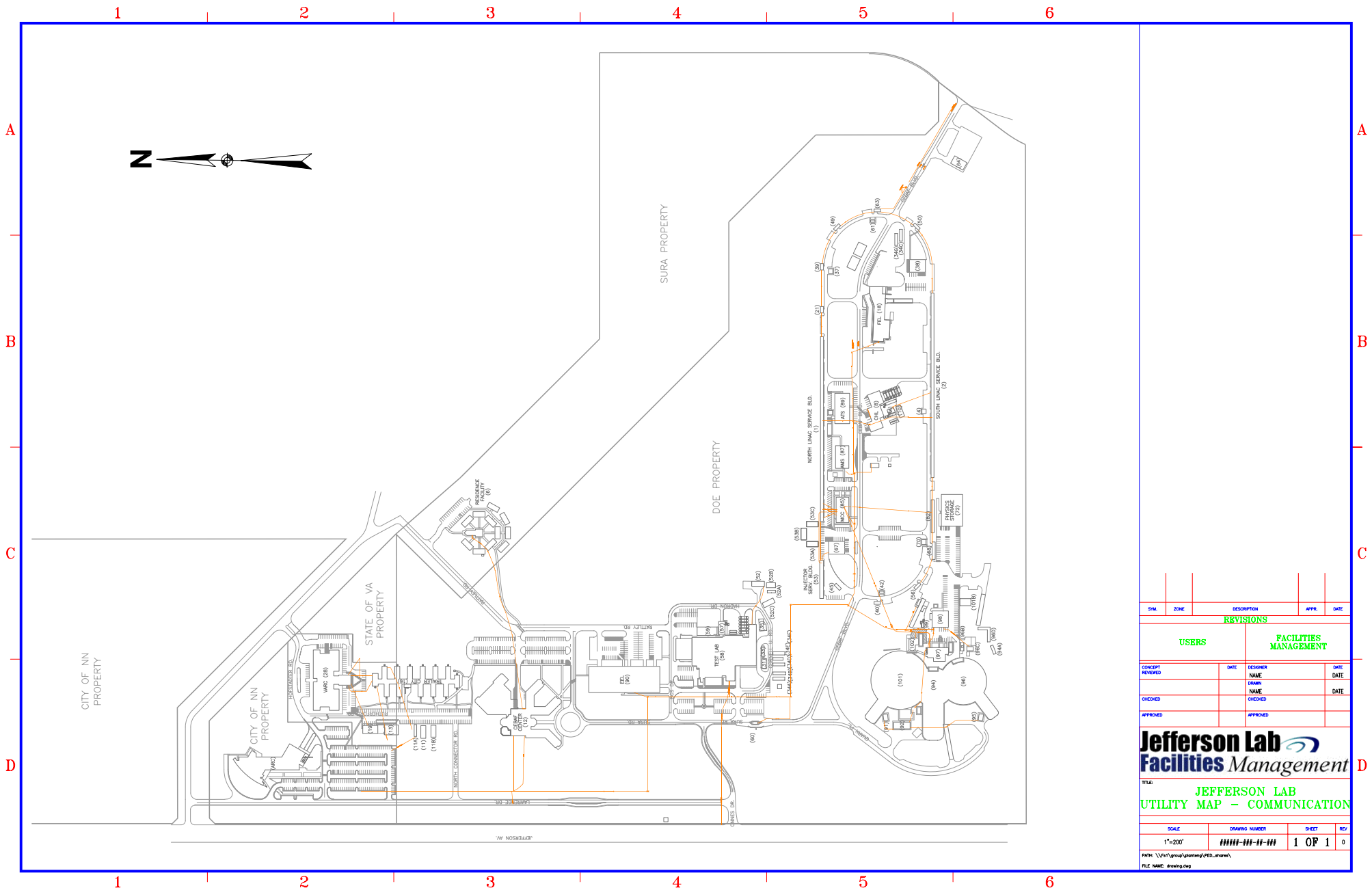
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REVISIONS				
USERS		FACILITIES MANAGEMENT		
CONCEPT REVISED	DATE	DESIGNER NAME DRAWN	DATE	DATE
CHECKED		CHECKED		DATE
APPROVED		APPROVED		
				
TITLE: JEFFERSON LAB UTILITY MAP - ELECTRIC				
SCALE		DRAWING NUMBER	SHEET	REV
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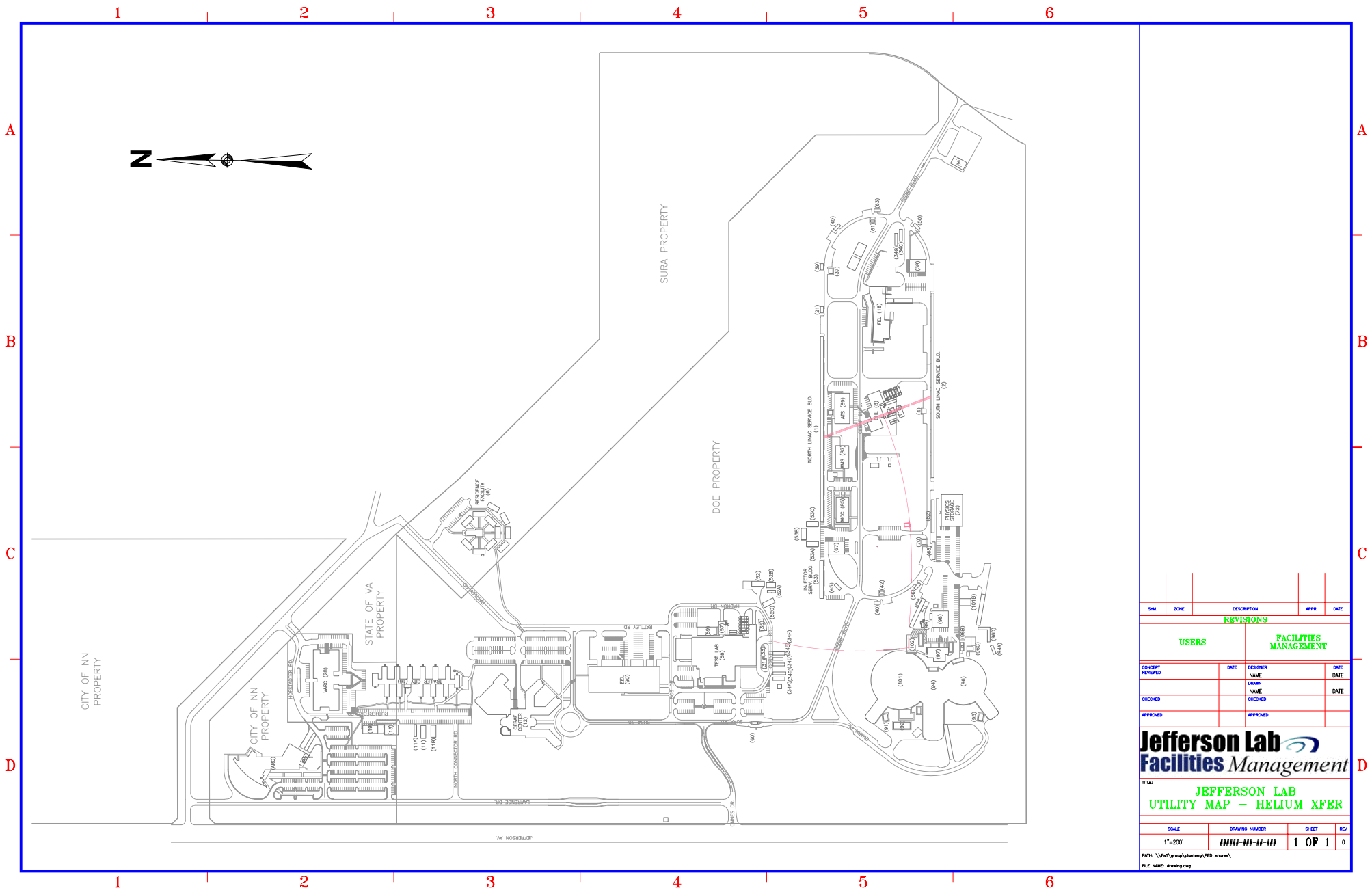
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REVISIONS				
USERS		FACILITIES MANAGEMENT		
CONCEPT REVIEWED	DATE	DESIGNER NAME	DATE	
CHECKED		DRAWN NAME	DATE	
APPROVED		CHECKED		
Jefferson Lab Facilities Management				
TITLE: JEFFERSON LAB UTILITY MAP - LCW				
SCALE	DRAWING NUMBER	SHEET	REV	
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SYN	ZONE	DESCRIPTION	APPR.	DATE
REVISIONS				
USERS		FACILITIES MANAGEMENT		
CONCEPT REVIEWED	DATE	DESIGNER NAME	DATE	
CHECKED		DRAWN NAME	DATE	
APPROVED		APPROVED		
Jefferson Lab Facilities Management				
TITLE: JEFFERSON LAB UTILITY MAP - CHILLED WATER				
SCALE	DRAWING NUMBER	SHEET	REV	
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SYN.	ZONE	DESCRIPTION	APPR.	DATE
REVISIONS				
USERS		FACILITIES MANAGEMENT		
CONCEPT REVIEWED	DATE	DESIGNER NAME	DATE	
CHECKED		DRAWN NAME	DATE	
APPROVED		APPROVED		
Jefferson Lab Facilities Management				
TITLE: JEFFERSON LAB UTILITY MAP - COMMUNICATION				
SCALE	DRAWING NUMBER	SHEET	REV	
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SYN	ZONE	DESCRIPTION	APPR.	DATE
REVISIONS				
USERS		FACILITIES MANAGEMENT		
CONCEPT REVIEWED	DATE	DESIGNER NAME	DATE	
CHECKED		DRAWN NAME	DATE	
APPROVED		CHECKED		
Jefferson Lab Facilities Management				
TITLE: JEFFERSON LAB UTILITY MAP - HELIUM XFER				
SCALE	DRAWING NUMBER	SHEET	REV	
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Deferred Maintenance Summary

TJNAF 10 Year Site Plan, May 2005

Type	Square Feet	Replacement Plant Value (1 Oct 2004)	Actual Maintenance (FY 2004)	Maint. Investment Index (MII)	Deferred Maintenance (FY 2004)	Facility Condition Index (FCI)	Asset Condition Index (ACI)	Rehab & Improvement Costs (RIC)
Buildings								
DOE Owned Buildings	407,191	\$87,129,133	\$2,657,920	3.05%	\$3,200,087	3.67%	0.963	\$35,678,987
State Leased Buildings	37,643	\$7,388,111	\$71,640	0.97%	\$406,348	5.50%	0.945	\$33,331
ARC	44,342	N/A	\$55,015	N/A	\$38,477	N/A	N/A	\$0
Leased Warehouse Space	11,558	N/A	\$2,456	N/A	N/A	N/A	N/A	
Subtotal	500,734	\$94,517,244	\$2,787,031	N/A	\$3,644,912	N/A	N/A	\$35,712,318
Trailers								
Real Property Trailers	49,346	\$4,840,031	\$88,994	1.84%	\$4,800,798	99.19%	0.008	\$0
Personal Property Trailers (includes transportainers)	21,744	\$573,175	\$0	N/A	\$550,709	N/A	N/A	\$0
Subtotal	71,090	\$5,413,206	\$88,994	N/A	\$5,351,507	N/A	N/A	\$0
Other Structures & Facilities (OSF)								
Tunnel	111,810	\$37,624,355	\$47,277	0.13%	\$186,396	0.50%	0.995	\$220,285
Halls	80,982	\$57,643,551	\$131,753	0.23%	\$100,000	0.17%	0.998	\$53,637
Other (Utilities/Roadways)	N/A	\$17,909,536	\$514,362	2.87%	\$1,311,099	7.32%	0.927	\$7,417,889
Subtotal	192,792	\$113,177,442	\$693,392	0.61%	\$1,597,495	1.41%	0.986	\$7,691,811
TOTAL	764,616	\$213,107,892	\$3,569,417	N/A	\$10,593,914	N/A	N/A	\$43,404,129
TOTAL DOE OWNED	671,073	\$205,719,781	\$3,440,306	1.67%	\$10,149,089	4.93%	0.951	\$43,370,798
DOE BUILDINGS & OSF's	599,983	\$200,306,575	\$3,351,312	1.67%	\$4,797,582	2.40%	0.976	\$43,370,798
DOE BUILDINGS, REAL PROPERTY TRAILERS, & NON-3000 OSF	456,537	\$109,878,700	\$3,261,276	2.97%	\$9,311,984	8.47%	0.915	\$43,096,876
Residence Facility	17,768	\$1,552,418	\$14,827	0.96%	N/A	N/A	N/A	N/A

Category	FY04			FY05 Projected			FY06 Projected			FY07 Projected		
	RPV (\$M)	DM (\$M)	FCI (%)	RPV (\$M)	DM (\$M)	FCI (%)	RPV (\$M)	DM (\$M)	FCI (%)	RPV (\$M)	DM (\$M)	FCI (%)
Buildings	\$87.13	\$3.20	3.7%	\$89.3	\$3.0	3%	\$101.9	\$2.8	2.7%	\$104.4	\$2.5	2.4%
Real Prop Trailers	\$4.84	\$4.84	100.0%	\$5.0	\$4.9	99%	\$2.9	\$2.8	98%	\$2.2	\$2.1	96%
Personal Prop Trailers	\$0.57	\$0.55	96.5%	\$0.5	\$0.5	100%	\$0.5	\$0.4	98%	\$0.5	\$0.5	98%
OSF Non-3000 Category	\$17.91	\$1.31	7.3%	\$19.6	\$1.2	6%	\$20.7	\$1.1	5%	\$22.0	\$0.8	4%
OSF 3000 Category	\$95.27	\$0.29	0.3%	\$97.2	\$0.3	0%	\$99.1	\$0.3	0%	\$101.1	\$0.3	0%
Total	\$205.72	\$10.19	5.0%	\$211.6	\$9.9	5%	\$225.1	\$7.4	3%	\$230.1	\$6.1	3%

FCI History for FY04 Through FY07

Category	FY08 Projected			FY09 Projected			FY10 Projected			FY11 Projected		
	RPV (\$M)	DM (\$M)	FCI (%)	RPV (\$M)	DM (\$M)	FCI (%)	RPV (\$M)	DM (\$M)	FCI (%)	RPV (\$M)	DM (\$M)	FCI (%)
Buildings	\$124.5	\$2.5	2.0%	\$127.0	\$3.0	2.4%	\$133.0	\$2.8	2.1%	\$135.7	\$2.5	1.9%
Real Prop Trailers	\$2.2	\$2.1	95%	\$0.9	\$0.9	99%	\$0.5	\$0.5	98%	\$0.5	\$0.5	98%
Personal Prop Trailers	\$0.5	\$0.5	96%	\$0.5	\$0.5	100%	\$0.5	\$0.4	98%	\$0.5	\$0.5	98%
OSF Non-3000 Category	\$23.0	\$0.8	4%	\$34.3	\$1.2	3%	\$35.8	\$1.1	3%	\$37.3	\$0.8	2%
OSF 3000 Category	\$103.1	\$0.3	0%	\$109.2	\$0.3	0%	\$111.4	\$0.3	0%	\$113.6	\$0.3	0%
Total	\$253.3	\$6.2	2%	\$271.9	\$5.8	2%	\$281.1	\$5.1	2%	\$287.6	\$4.6	2%

FCI Projections for FY08 Through FY11

Facilities & Infrastructure
Budget Datasheet

TJNAF 10 Year Site Plan, May 2005

Integrated Facilities and Infrastructure Budget Data Sheet (IFI)	Project Number	Gross Building Area	FY 2004 Budget (\$000)	FY 2005 Budget (\$000)	FY 2006 Target Budget (\$000)	FY 2007 Target Budget (\$000)	FY 2008 Target Budget (\$000)	FY 2009 Target Budget (\$000)	FY 2010 Target Budget (\$000)	FY 2011 Target Budget (\$000)	FY 2012 Target Budget (\$000)	FY 2013 Target Budget (\$000)	FY 2014 Target Budget (\$000)	FY 2015 Target Budget (\$000)	FY 2016 Target Budget (\$000)
SITE NAME: JEFFERSON LAB															
PROGRAM															
1.0 Capital Line Item (Include project number & identify Funding Program)															
1.1 New Construction (facilities and additions)															
CEBAF Center Addition, Phase 1 (SLI Funded)	MEL-001-033	61,000	9,019												
CEBAF Center Addition Phase 2 (SLI Funded)		70,000								8,500	8,500				
SRF Engineering Test Facility (SC Funded; NP/HEP/BES, jointly or single program)		20,000					10,000	10,000							
12 GeV Conventional Facilities (NP Funded)		26,500				TBD	TBD	TBD							
Test Lab Rehab (SLI Funded)													9,500		
1.2 All Other Projects (recap)															
Subtotal Line Item Projects		177,500	9,019	-	-	-	10,000	10,000	-	8,500	8,500	-	9,500	-	-
2.0 General Plant Project (GPP) (Include project number & identify Funding Program)															
2.1 New Construction (facilities and additions)															
Accelerator Loop Generator (Additional NP funding)	04-GPP-300-2		632												
Accelerator Site Technical Building (Redirected) (See below note)	04-GPP-300-3	33,000	1,000			2,000									
Computer Center UPS	04-GPP-300-4		180												
Hall C 2 MW Transformer	04-GPP-300-6		155												
Injector Cleanroom	04-GPP-300-7		143												
Test Lab Fire Protection Improvements	05-GPP-300-1			150											
Upgrade Accelerator Fire Detection Zones	05-GPP-300-2			150											
Lead Storage Facility	05-GPP-300-3	500		150											
General Site Storage (1 bldg)	05-GPP-300-4	2,400		150											
South Connector Road	05-GPP-300-6			200											
Gate House (S&S Funds)	05-GPP-300-10	480		300											
East Site Pond & Drainage Improvements	06-GPP-300-1				648										
Acid Neutralization Bldg HVAC	06-GPP-300-2				100										
Additional Site LCW (FEL Funded)	06-GPP-300-4				300	300									
General Site Storage (2 Bldgs.)	07-GPP-300-1	4,800				500									
Mobile Equipment Storage (1 Building)	07-GPP-300-2	2,400				200									
Accelerator Site Technical Building 2 (See below note)	08-GPP-300-1	16,000					770	794							
CEBAF Center Wing D (See below note)	10-GPP-300-1	13,800							817	594					

Facilities & Infrastructure
Budget Datasheet

TJNAF 10 Year Site Plan, May 2005

Integrated Facilities and Infrastructure Budget Data Sheet (IFI)	Project Number	Gross Building Area	FY 2004 Budget (\$000)	FY 2005 Budget (\$000)	FY 2006 Target Budget (\$000)	FY 2007 Target Budget (\$000)	FY 2008 Target Budget (\$000)	FY 2009 Target Budget (\$000)	FY 2010 Target Budget (\$000)	FY 2011 Target Budget (\$000)	FY 2012 Target Budget (\$000)	FY 2013 Target Budget (\$000)	FY 2014 Target Budget (\$000)	FY 2015 Target Budget (\$000)	FY 2016 Target Budget (\$000)
Computer Center Power and Cooling	12-GPP-300-1									248	752				
North Connector Road Parking Lot	12-GPP-300-2										255				
West Site Retention Pond	12-GPP-300-3										450				
General Site Storage (2 Bldgs)	12-GPP-300-4	4,800									270	290			
Sidewalk CC to Gate House	12-GPP-300-5										40				
Bulk Material Handling Area	12-GPP-300-6										165				
Mobile Equipment Storage (1 Building)	12-GPP-300-7	2,400									215				
Accelerator Site Road Improvements	12-GPP-300-12										250				
Sidewalk from Gate House to 87	12-GPP-300-13										35				
Accelerator Site Primary/Secondary Electrical Renewal	12-GPP-300-14										500				
West Site Waterline Loop	13-GPP-300-1										300				
Communications Upgrade	13-GPP-300-2										350				
CEBAF Center Kitchen Upgrade	13-GPP-300-3										420				
North Connector Road Extension	13-GPP-300-4										260				
Test Lab Parking Improvements	13-GPP-300-1											110			
End Station Refrigerator Building & Utilities	13-GPP-300-2	3,600										1,750	1,000		
End Station Cooling Tower Renewal	13-GPP-300-3											380			
Digital Optics & Laser Lab	13-GPP-300-4											500			
Shipping/Receiving & Storage	13-GPP-300-5	21,000										1,500	2,100		
Site Lighting Improvements	14-GPP-300-1												250		
FEL Addition Ph 1	14-GPP-300-2	23,500											1,400	2,700	900
Perimeter Fence	15-GPP-300-1													960	
Education Center	15-GPP-300-2	22,300												1,000	3,200
Badge Office	16-GPP-300-1	500													500
Note: Supplemented with Deferred Maintenance Reduction funding															
2.2 All Other Projects (recap)															
Subtotal GPP:		151,480	2,110	1,100	1,048	3,000	770	794	817	842	4,262	4,530	4,750	4,660	4,600
3.0 Institutional General Plant Project (IGPP)															
N/A															
Subtotal IGPP Projects															
4.0 Operating/Expense for Excess Elimination and Other															

Facilities & Infrastructure
Budget Datasheet

TJNAF 10 Year Site Plan, May 2005

Integrated Facilities and Infrastructure Budget Data Sheet (IFI)	Project Number	Gross Building Area	FY 2004 Budget (\$000)	FY 2005 Budget (\$000)	FY 2006 Target Budget (\$000)	FY 2007 Target Budget (\$000)	FY 2008 Target Budget (\$000)	FY 2009 Target Budget (\$000)	FY 2010 Target Budget (\$000)	FY 2011 Target Budget (\$000)	FY 2012 Target Budget (\$000)	FY 2013 Target Budget (\$000)	FY 2014 Target Budget (\$000)	FY 2015 Target Budget (\$000)	FY 2016 Target Budget (\$000)
4.1 Excess Elimination (demolition, sale, lease, transfer) Show area eliminated in Gross Area column															
N/A															
4.1 Subtotal															
4.2 All Other (List direct O&E maintenance under 5.1)															
BPA Financed Energy Projects (loan repayment)			572	572	572	572	572	572	572	572	572	379	379	379	379
10 MW Emergency Power Switch (loan repayment)							220	220	220	220	220	220	220	220	220
Upgrade 9 MVA Substation to 15 MVA (loan repayment)								100	100	100	100	100	100	100	100
4.2 Subtotal			572	572	572	572	792	892	892	892	892	699	699	699	699
Subtotal Operating/Expense Projects			572	572	572	572	792	892	892	892	892	699	699	699	699
TOTAL Capital & Operating Investment:			11,701	1,672	1,620	3,572	11,562	11,686	1,709	10,234	13,654	5,229	14,949	5,359	5,299
TOTAL Overhead Investments (IGPP)			0	0	0	0	0	0	0	0	0	0	0	0	0

Facilities & Infrastructure
Budget Datasheet

TJNAF 10 Year Site Plan, May 2005

Integrated Facilities and Infrastructure Budget Data Sheet (IFI)	Project Number	Gross Building Area	FY 2004 Actual (\$000)	FY 2005 Budget (\$000)	FY 2006 Target Budget (\$000)	FY 2007 Budget (\$000)	FY 2008 Budget (\$000)	FY 2009 Budget (\$000)	FY 2010 Budget (\$000)	FY 2011 Budget (\$000)	FY 2012 Budget (\$000)	FY 2013 Budget (\$000)	FY 2014 Budget (\$000)	FY 2015 Budget (\$000)	FY 2016 Budget (\$000)
SITE NAME: JEFFERSON LAB															
PROGRAM:															
5.0 Maintenance & Repair															
5.1 Direct Funded (by HQ or Site Program)															
Health Safety Improvement Funding			338												
Safeguards & Security			32	50	50	52	54	55	57	59	60	62	64	66	68
Deferred Maintenance Reduction Initiative															
Technical Support Bldg 1 (Trailers 34A, 34B, 34C, 34F, 34G, 53A, 53B, 53C)						850									
Building 52 Seismic Upgrade						50									
Replace CHL Cooling Tower							300								
Test Lab Electrical Primary & Secondary Cable & Switchgear Replacement							1,400								
Technical Support Bldg 2 (Trailers 16, 93A, 94D, 101B)								1,350							
Upgrade Accelerator Fire Protection Zones								160							
Counting House HVAC Rehab								100	300						
Accelerator LCW Controls Upgrade								150							
North & South Access Bldg Cool Tower Replacement								640							
Accelerat Site Electrical Primary & Secondary Replacement									1,100						
CEBAF Center Wing D (Trailers 35, 52A, 52B, 52C, Test Lab High Bay Offices)									1,800						
Note: Bolded Projects replace facilities beyond economic repair. Above funding is limited by value of trailers. Project funding supplemented with GPP.															
Total Direct Maintenance & Repair			370	50	50	952	1,754	2,455	3,257	59	60	62	64	66	68
5.2 Indirect (from Overhead or Space Charges)			3,440	2,244	2,511	2,571	2,994	3,245	3,385	3,471	3,615	4,035	4,122	4,331	4,389
Include indirect O/E maintenance projects in total															
Total Indirect Maintenance & Repair			3,440	2,244	2,511	2,571	2,994	3,245	3,385	3,471	3,615	4,035	4,122	4,331	4,389
6.0 Indirect O&E Excess Elimination (demolition, sale, lease, transfer) Show area eliminated in Gross Area column															
Excess Trailers (Technical Support Bldg 1)		8,200					45								
Excess Trailers (Technical Support Bldg 2)		13,700						55							
Excess Trailers Test Lab Elevated Space (CEBAF Center Wing D)		5,500									100				
Excess Trailers (General Site Storage)		8,000										40			
Excess Trailers (Shipping/Receiving-Storage)		12,160												60	
Total Indirect Excess Elimination		47,560	0	0	0	0	45	55	0	0	100	40	0	60	0

NOTE: Indirect maintenance is funded from overhead generated from a G&A pool. Estimate for FY2005 G&A rate is 30 % of all direct labor and the first \$50K of every purchase or modification.

Facilities & Infrastructure
Budget Datasheet

TJNAF 10 Year Site Plan, May 2005

Integrated Facilities and Infrastructure Budget Data Sheet (IFI)	Project Number	FY 2004 Budget Year (SF)	FY 2005 Budget Year (SF)	FY 2006 Budget Year (SF)	FY 2007 Budget Year (SF)	FY 2008 Budget Year (SF)	FY 2009 Budget Year (SF)	FY 2010 Budget Year (SF)	FY 2011 Budget Year (SF)	FY 2012 Budget Year (SF)	FY 2013 Budget Year (SF)	FY 2014 Budget Year (SF)	FY 2015 Budget Year (SF)	FY 2016 Budget Year (SF)
SITE NAME: JEFFERSON LAB														
PROGRAM:														
7.0 Area of Excess Eliminated														
List of projects, by type of funding, with project number, and excess AREA eliminated by fiscal year accomplished.														
Line Item														
CEBAF Center Addition, Phase 1 (TJNAF) (Excess existing trailers)	MEL-001-033			22,000										
SRF Engineering Test Facility						3,683								
GPP														
IGPP														
Operations/Expense														
Indirect Operations/ Expense														
Excess Trailers (Technical Support Bldg 1)							8,200							
Excess Trailers (Technical Support Bldg 2)								13,700						
Excess Trailers & Test Lab High Bay Offices (CEBAF Center Wing D)										5,446				
Excess Trailers (General Site Storage)											8,000			
Excess Trailers (Shipping/Receiving-Storage)													13,744	
Transfer by sale or lease, or transfer to an outside federal agency														
Subtotal of Excess Facility Area Eliminated				22,000	-	3,683	8,200	13,700	-	5,446	8,000	-	13,744	
Total Area to be Eliminated Each Year (Demolition, Sale or Transfer Completion Year)				22,000	-	3,683	8,200	13,700	-	5,446	8,000	-	13,744	
Total Area to be Added by GPP, IGPP, and LI Construction (List Area Under Occupancy Year)		78	420	64,380	-	7,200	33,000	62,500		13,800	72,400	69,600	24,600	24,000

JEFFERSON LAB

OUTYEAR FUNDING & STAFFING PROJECTIONS (Plus 5% FUNDING SCENARIO)

FUNDING M\$; (FY06 - FY16 Requirements)	FY04 Actual	FY05 target	FY06	FY07	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Nuclear Physics Funding:													
ME Research	5.2	5.2	5.1	5.3	5.5	5.6	5.8	6.0					
Theory Research	2.4	1.7	1.6	1.7	1.7	1.8	1.8	1.9					
RIA R&D	0.1												
Facility Operations	73.4	78.2	71.6	72.2	73.4	75.3	77.6	80.1					
Operations	81.2	85.1	78.2	79.2	80.6	82.7	85.3	88.0	90.6	93.3	96.1	99.0	102.0
GPP	2.1	0.8	0.7	0.8	0.8	0.8	0.8	0.8	4.5	5.0	5.1	4.9	5.6
12 GeV PED/Construction				3.0	4.0	4.5	4.5	4.5					
Other Research													
CEBAF Center Addition	9.0							8.5	8.5				
SRF Engineering Test Facility					10	10							
Test Lab Rehab											9.5		
Spallation Neutron Source	4.0												
Safeguards and Security	1.1	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.7	1.7
Imaging	1.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.6	0.6
SciDAC		0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.8	0.8	0.8
LQCD Facilities			0.4	1.0	1.0	1.1	1.1	1.1	1.2	1.2	1.2	1.3	1.3
FEL	16.5	10.9	12.5	12.0	12.0	12.0	12.0	12.0	12.4	12.7	13.1	13.5	13.9
Other	0.2	0.5	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.5	0.5
Commonwealth of Virginia	1.2	1.2	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
Total	116.3	102.2	97.6	101.6	111.6	114.1	106.6	117.8	124.3	119.1	131.5	123.9	128.0
Weeks Of Operation	30.0	29.8	28.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4	29.4
Reliability	85%	80%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%	85%
Manpower (FTE, Staff, Students, Joint Appointments, Contract Labor, States)	714	705	653	667	667	667	667	667	667	667	647	647	647
End of FY Head Count (SURA, State, Contract Labor)	729.0												
Number of Users/yr	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150	1,150
Number of On-site Users Per Year	746												
Average Users on-site per month	342												
Max Users on-site During a given Month	437 June												
Month Max Users on-site During a given Month	June												
Max Users On-site During a given day	292												